June, 1958

# SOAP and CHEMICAL SPECIALTIES

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New "Promp Bug Killer" just introduced in midsouth by Dust-A-Way. Inc., a subsidiary of Delta Chemical Co., Memphis. For control of flying insects. product comes packed in amber bottle featuring applied color label in red. gray and white. Metal closures and bottles by Owens-Illinois Glass Co., Toledo 1, Ohio.



# Fragrance for every occasion from the perfume laboratories





#### **DODGE & OLCOTT, INC.**

180 Varick Street, New York 14, N. Y.

Sales Offices in Principal Cities

# IN 3 MINUTES

you see why only Armour can guarantee the color stability of double-pressed stearic acid

3 minutes may be all you need to find the "key" which will help you improve your finished products. That's why we hope you'll reserve a few moments to see your Armour representative next time he calls. (( His flip-card demonstration clearly shows why Neo-Fat® 18-54 has no equal for color stability. You'll see test results that prove just one thing: why only Armour can guarantee double-pressed stearic showing 4.OR-30Y or less on a 514" Lovibond Scale-following 2 hours heating at 200°C. (But we know a 3-minute presentation alone is not enough. That's why we invite you to send for a laboratory sample. Your own tests will prove that Armour Neo-Fat 18-54 has the stability, purity and uniformity you need for finer finished products.



ARMOUR CHEMICAL DIVISION . 1355 WEST 31ST STREET . CHICAGO 9, ILLINOIS



For the Armour man nearest vou, see Chemical Materials Catalog, Page 108.



For private brand resale
buyers of waxes
and kindred products

..Your Quality Guide

#### WATER EMULSION WAXES

Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY®
CANDY'S SUPREME Special WR
SUPER (AND-DOX®

CAND-DOX\* # CS

All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

#### Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to absolute to traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

#### Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax...beauty and protection.

#### Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Over-doing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

#### **Solid Content**

The percentage of solid content is not nearly as important as the quality of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Overwaxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

#### Carnauba Wax

The most important features of a good wax...all-around quality of performance...are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba alone imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

#### Other HIGHEST QUALITY products of CANDY & COMPANY, Inc.

#### CANDI-COAT 1000, WATER RESIN EMULSION

As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER

For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging...nothing but water to buy or mix in.

but water to buy or mix in.
Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits repeated repolishing with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX

Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES

A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry

cleaner" to keep surfaces waxed protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a glass cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanliness to glass. As a cleaner of silver, it polishes to a high lustre without abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove...free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER

Cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

CONTAINER SILK SCREEN LABELING

Now you can have dramatic, colorful labeling of your private brand name on all 55, 35, 30, 20 & 15 gal. drums and 5 gal. pails. This added service is accomplished right in our plant...your inspection invited...or write for details.

Candy & Company, Inc

Wax Specialists for over 65 years

2515 W. 35th ST., CHICAGO 32

# SOAP and CHEMICAL SPECIALTIES

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#### MEMBER



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#### What's new in cleaning agents?

Every chemical advancement for industry is discovered twice. It's discovered first by the research chemist who develops it. It's discovered a second time... by you when it begins to pay dividends as a part of your products or processes. The time that lapses between these two discoveries is a measure of how your products... and profits... stand competitively. New developments are born overnight. New uses for familiar products come just as fast. This is the first in a series of chemical news notes to help you keep your products... and profits... up to date.

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# SOAP MAKERS DISSOLVE HIGH COST HARD WATER PROBLEMS WITH VERSENE 100

Soaps can compete for sales on an even footing with syndets these days, thanks to the "conditioning" they get from chelating agents like Versene® 100. Soap formulations containing Versene 100 can deliver cleaning performance equal to syndets in water of 7 grain hardness—at the same cost!

Originally, the high cost of using chelating agents to keep a soap formulation competitive in the wash prevented the formulation from appearing on the gro-

Soaps can compete for sales cer's shelf. A startling reduction in the cost of chelating agents in recent years, however, has eliminated this barrier.

A maker of liquid soaps and shampoos explained the spot he was in before chelating agents came to the rescue. He said: "Metal ions were a real problem in our products. Shampoos clouded on standing. And our liquid soaps were fouling dispensers. It was tough to explain that we weren't making 'dirty soap'."

For many manufacturers, chelating agents like Versene 100 have made a remarkable difference. Liquid soaps flow through dispensers without leaving the messy footprints of metal ions. Flake soaps pack the same cleaning

power in moderately hard water as syndets. Shampoos keep the luster of sales appeal.

Continuously studying and developing the use of chelating agents in the soap industry, Dow produces a family of chelating agents under the Versene trademark. Versene 100, Versene Powder and Versene Flake are different forms of the tetrasodium salt of EDTA, the most effective and versatile of the commercially available chelating agents. From Dow, soap makers are finding the latest answers to their metal ion problems—from eliminating the chilling stage in production to keeping the consumer from giving the product the cold shoulder at the point of sale.



#### CAUSTIC:

#### 12 big reasons why you never have to wait

Caustic soda has long been the acknowledged barometer of the chemical industry. And for the soap or syndet maker who doesn't have it when he needs it . . . the storm warnings go up.

"That's why we go to Dow for caustic," one manufacturer said. "Fact is, I never give caustic supply a thought any more. I don't have to. With Dow, it's always there when we need it.'

This taken-for-granted supply situa-

tion is possible because of painstaking care in production planning at Dow's 4 producing plants, and clockwork delivery system from Dow's 8 coast-to-coast supply terminals . . . 12 big reasons why you never have to wait.

For an industry that can't operate without caustic, Dow supplies this basic ingredient in six forms-solid, flake, ¼" flake, ground flake, 50% solution and 73% solution. And whether a customer orders his caustic in a handy drum or in one of the specially designed tank cars in the Dow fleet, he's sure of getting it on time and in peak condition.

The attitude of Dow customers is pretty well summed up by a plant superintendent who stated, paradoxically: "Caustic is so important to us we order it from Dow and forget about it". The complete story of Dow caustic makes interesting reading for a production manager. And it's available nowin Dow's new handbook, "Dow Caustic Soda", considered by many to be the most complete, authoritative, and best illustrated book on caustic soda available today.

#### DOWICIDE:

#### Chemical "packaging" protects soaps, syndets

Product discoloration from mold and mildew has caused many a soap or syndet maker a prematurely gray head.

As one sales manager put it, "If our packages sit on the shelf a little too long, they might as well sit there forever-we have to give them away anyway'

Liquid starches and floor waxes are now being fortified for longer shelf life with Dowicide® preservatives. These remarkable preservatives protect boxes, wrappers-and the contents of bottles and cans-from fungus, rot and mildew.

"Dowicide products saved us trouble all the way from warehousing to the store shelf", reports the president of a liquid floor wax firm.

Dowicide products used as odorless germicides in many disinfectants have become "invisible packaging" against deterioration of product packages—and profits. From the Dow staff, manufacturers are getting new answers to "long standing" problems.

\* \* \* \*



Happy hands and happier sales resulted when soap manufacturers used Versene 100 to control unruly metal ions.

If you aren't already profiting from these and other Dow chemicals, discover how you can. We suggest you write for complete information to Chemicals Sales De-partment 778R, THE DOW CHEMICAL COM-PANY, Midland, Michigan.



PARADOW®

One way to be sure of uniform paradichlorobenzene—with improved crystal structure, less fragmentation and greater clarity—is to order Paradow.



DOWANOL®

New 52-page book describes Dowanol line, widest range of glycol ethers, viscosities, boiling points, includes both ethylene and propylene series.

#### **Dow chemicals** basic to the soap industry

Raw Materials • Extractive Agents Purifiers . Aromatics . Solvents Coagulants • Preservatives • Chelating Agents • Ion Exchange Resins • Alkalies Ethylene and Propylene Oxide

YOU CAN DEPEND ON



SKILLED HAND IN CHEMISTRY ... AT WORK FOR YOU Dishwashing Liquids Rug Shampoos Car Wash Powders **Laundry Detergents Bubble Bath Preparations** Wall Cleaners **Household Degreasers** Liquid Scouring Concentrates Floor Cleaning Preparations Window Cleaners **Textile Detergents** Antiseptic Sanitizers **Dairy Detergents** 

# **NOPCO HYONICS**

# make <u>all</u> detergents better

Almost any property you require to formulate into your household or industrial detergent is yours with Nopco. Our large and fast-growing family of Hyonics is helping manufacturers everywhere give their products the performance characteristics that mean wide public acceptance; and making it possible at competitive costs.

The Hyonic PE Series is a versatile group of octyl phenol condensates. Their properties, determined by their ethylene oxide molarity, offer the widest range of applications in the surface-active category. For instance, PE 30 is a popular emulsifier and defoamer, while PE 150 is an excellent high-foaming detergent. The intermediate members (PE 70-100) are all-purpose products having superior detergent, rapid wetting, and high-foaming abilities.

The Hyonic LA Series is a new group of Hypurity Alkylolamides which virtually eliminate unreacted diethanolamine, ester-amide, and other by-products. Their amide contents approach 100%, in con-

trast to the usual 60%. These new surfactants build and stabilize foam, increase the viscosity of liquid detergent products, improve detergency and wetting, and inhibit rusting of steel containers. They are used chiefly in dishwashing detergents, shampoos, bubble baths, industrial cleansers, light duty liquid cleaners, floor cleaning preparations, and textile detergents.

\* \* \*

Because Nopco makes and sells a complete line of surface-active chemicals, manufacturers can place a single order for all such needs. This means important savings—they both qualify for quantity discounts and save on freight.

Write today for samples and literature on Nopco Hyonics. Let Nopco chemists, always ready to work with you and for you, help you produce detergents to your own specifications. Nopco Chemical Company, Harrison, N.J.



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Sodium Tripolyphosphate • Tetrasodium Pyrophosphate • Trisodium Phosphate (Crystalline-Monohydrate) • Trisodium Phosphate Chlorinated • Disodium Phosphate (Crystalline-Anhydrous) • Monosodium Phosphate (Anhydrous-Monohydrate) • Sodium Polyphos (Sodium Hexametaphosphate-Sodium Tetraphosphate) • Sodium Acid Pyrophosphate • Tetrapotassium Pyrophosphate • Sodium Fluoride • Sodium Silicofluoride • C-29 Sequestering Agent • Teox 120 (Nonionic Surfactant) • Hydrofluoric Acid • Sulfuric Acid.

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SOAP and CHEMICAL SPECIALTIES



# Guess!

You can't fool her eyes . . . but the magic of Verona's research and development chemists has perfected aromatic developers and extenders that can, and do, fool her nose.

Clean, fresh, brilliant top notes that rival Nature's own . . . and are helping some of America's leading cosmetics along the road to leadership.

Remember . . . the important point about the point of sale is this — to cosmetics shoppers the fragrance is vitally important. The scent can send *more* sales your way! We will gladly forward samples of the Verona specialties listed at the right. Try them and see for yourself how much more successfully they help you hit, and *hold*, the high notes.

#### A FEW VERONA SPECIALTIES

RESEDALIA, an acetal.

VERONOL, an aldehyde.

CYCLAMAL, cyclamen aldehyde.

ROSANOL, an acetal.

PHENYL ACET ALDEHYDE PHENYL GLYCOL ACETAL

TERTIARY BUTYL DI METHYL CUMARIN

ORYCLON

FLOWER OIL WHITE LILAC.



#### PRODUCTS BUILD SALES FOR

**PRODUCTS** 

VERONA CHEMICALS A Division of Verona-Pharma Chemical Corp.
Plant and Main Office: 26 Verona Avenue, Newark, N. J. 1210 Rosedale Avenue, Chicago, Ill.

# PILOT DETERGENTS

CONCENTRATED QUALITY CUTS COSTS

HD-90

90% Minimum active dodecyl benzene sodium sulfonate flake

SP-60

56% Minimum Active dodecyl benzene sodium sulfonate paste

ABS-99

96-98% Dodecyl benzene sulfonic acid TS-60

60% Triethanolamin sulfonate liquid

#### MORE DETERGENT SUDS PER DOLLAR

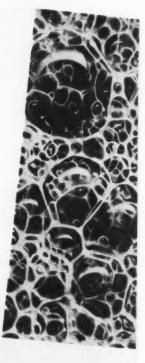
10% HIGHER CONCENTRATION AT EQUAL COST—That is what these unique sulfonates make available to you. The four products above and those listed below give new possibilities in detergent formulation.

- AL-40 AMMONIUM SULFONATE IN ALCOHOL
- SF-40 SODIUM DODECYL BENZENE SULFONATE FLAKE
- KP-60 POTASSIUM DODECYL BENZENE SULFONATE PASTE
- 575-85 SODIUM TOLUENE SULFONATE FLAKE

More detergent suds *immediately* increase consumer acceptance for your product! Cold processing by PILOT at temperatures below freezing produces superior sulfonates more homogeneously effective for such use as household sudsers, industrial detergents and scouring powders. In both dry powders and in liquid solutions, PILOT sulfonates are unique in concentration and purity levels.

Cold processing eliminates undesirable side reactions, hydrocarbon odors, and any rearrangement of the molecular structure. PILOT concentration and low sulfate properties *eliminate filtering*; give liquids the highest sudsing and cleaning powers obtainable.

Write today for formulas and samples of any of the PILOT concentrates. Only PILOT features highest concentration and premium quality at competitive prices! Immediately available in quantity lots.





PILOT California Co.

215 WEST 7th STREET . LOS ANGELES 14, CALIFORNIA

Manufacturers of Sulfonic Acid Dodecyl Benzene Sulfonates Sodium Toluene Sulfonate



# you, too, can profit from stability in OLEIC ACID

here's how Emersol® 233 LL Elaine increases shelflife of a surgical soap Case History No. 83-02: "A large manufacturer of surgical and germicidal soaps continually had problems of storage stability of a high grade surgical soap. The development of rancidity and changes in color were particularly disturbing to users of the soap especially where cleanliness and sterilization are imperative. Upon investigating Emersol 233 LL Elaine, this manufacturer found it so superior to the double distilled oleic acid he had been using, that it eliminated all problems of instability and odor development. Emersol 233 was also tried in other germicidal soaps in this manufacturer's line and the improvement in stability was again outstanding."

This is but one example of how outstanding stability improved a group of products. In any product, the replacement of ordinary oleic acids by a comparable Emersol grade prevents the development of rancid odors and avoids discoloration, breakdown of emulsions, changes in texture, and any deterioration of performance. So, why risk your products' good reputation when you can guard against failures so easily—by always buying the Emersol brand when you need oleic acids.



& Emery

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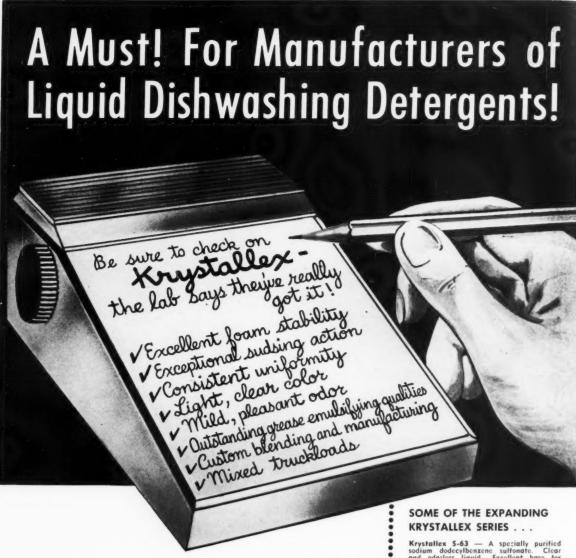
Emery Industries, Inc. Dept. S-6, Carew Tower Cincinnati 2, Ohio

Please send me 20-page Emeryfacts titled "Emersol Oleic Acid."

Name.....Title.....

Company.....

City......State....



If you now market or are planning to market a liquid dishwashing detergent for the home, institutional or sanitary supply field, it will pay YOU to look into KRYSTALLEX raw materials. Krystall Chemical is a basic producer of detergent raw materials and can custom-tailor detergents to your precise needs. Every day, KRYSTALLEX detergents find more and more applications in nationally-known products; in hand cleaners, shampoos, textile and floor cleaners, all-purpose cleaners. Krystall Chemical takes special pride in its prompt service on all surfactant requirements, whether it be for a drum, carload or tank car. Write today for full details and technical help on how to improve your product, expand your markets, boost your profits . . . with Krystallex raw materials.

Krystallex S-63 — A specially purified sodium dodecylbenzene sulfonate. Clear and odorless liquid. Excellent base for clear liquid formulations such as liquid dishwashing detergents.

Krystallex S — A dodecylbenzene sulfonic

Krystallex S-75 — An ammonium alkyl phenoxyethylene sulfate.

Krystallex LA — A 100% active non-ionic fatty acid alkanolamide manufactured for use as a foam stabilizer.

Krystallex C — A sodium lauryl sulfate — characterized by its uniform high viscosity — excellent base for creme shampoos.

Krystallex A-A sodium lauryl sulfate with a very low salt content and low viscosity.

Krystallex T — A triethanolamine lauryl sulfate. High activity, low cloud point, very light color and color stability toward light.

Krystallex S-26 — A new detergent manufactured exclusively for shampoo use.





SPECIALTY CHEMICALS"



#### COLOR-CODED for instant identification!

Handsome is as handsome does—and the attractive color coding of Westvaco® Phosphates does much to ease in-plant handling and inventory control. Customers find the idea extremely useful.

Distinctive colors for different phosphates makes it easy to locate materials in a busy warehouse. Or to spot at a glance what's on the bottom of a skid without moving the top bags. Helps prevent errors and speed up handling at the mixer, too.

Color-coding is one of many extras that add up to the industry's best service on phosphates. Others include exceptional cooperation in providing unitized shipments or special packaging when needed, individually expedited orders in emergencies, the longest line of phosphates made and willingness to accommodate customers with product modifications.

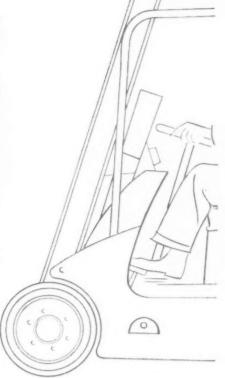
Our nearest office will gladly quote on the products listed.

POTASSIUM PHOSPHATES

Tetrapotassium Pyrophosphate Monopotassium Phosphate Dipotassium Phosphate Tripotassium Phosphate Potassium Tripolyphosphate

SODIUM PHOSPHATES

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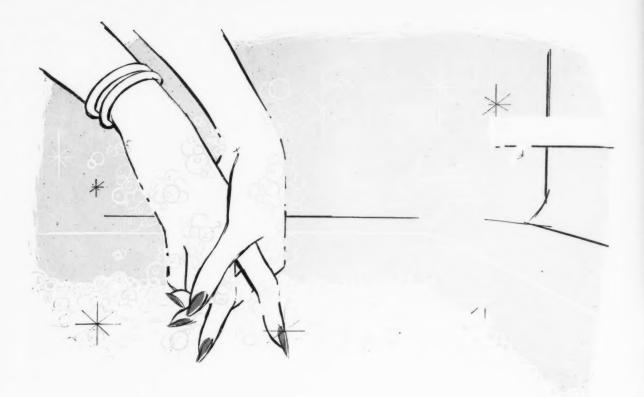


Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION

Westvaco Mineral Products Division

General Sales Offices: 161 E. 42nd STREET, NEW YORK 17



### For Premium Grade Soaps, depend on ADM fatty acids

Top quality soaps start with the best vegetable fatty acids. That's why ADM fatty acids are the first choice of premium soap manufacturers.

You can choose from nine specialized ADM corn, soya, cottonseed, or linseed fatty acids. A glance at the specifications shows that this complete line gives you a wide selection, whether you are looking for economy, easier processing, or higher quality.

That's one of several big advantages you gain in doing business with ADM—you have a single reli-

able source for a complete line of dependably uniform fatty acids. Highest purity and unvarying specifications are always assured.

In addition to the time-saving convenience which comes with buying from ADM, you also have the advantage of being able to buy any combination of fatty acids and linseed and soybean oils in truckload, carload, or tankcar shipments. These combined purchases add up to healthy savings.

#### A COMPLETE LINE FOR YOUR NEEDS

Many soap and chemical specialties manufacturers find other ADM chemical products profitable and useful. ADM sells lauryl, myristyl, cetyl, stearyl and oleyl alcohols, hydrogenated fatty acids and hydrogenated glycerides as well as vegetable fatty acids. If you manufacture soaps, surfactants or cosmetics, ADM's complete line of Hydrofol Products should be on your approved list.

Linseed, Soybean and Marine Oils, Synthetic and Natural Resins, Fatty Acids and Alcohols, Vinyl Plasticizers, Hydrogenated Glycerides, Sperm Oil, Foundry Binders, Bentonite, Industrial Cereal, Vegetable Proteins, Wheat Flour, Dehydrated Alfalfa, Livestock and Poultry Feeds.

		lodine Value	Titer	Color (Gardner)	Acid Value
LINSEED	Water White Distilled Regular Distilled SM-500	180 Min. 157 Min. 152 Min.	17-20 18-24 18-24	3 Max. 6 Max. 10 Max.	197-204 195-204 193-204
SOYA	Water White Distilled RO-10 RO-11-S	135 Min. 124 Min. 124 Min.	20-23 23-29 23-29	2 Max. 5-6 4 Max.	195-205 195-205 195-205
SOYA-TYPE	RO-8	115 Min.	30 Max.	6-8	195-205
COTTONSEED	Double Distilled	95-110	32-38	8 Max.	195-205
CORN	Double Distilled	105 120	26.22	0 14	105 205

ArcherDanielsMidland

PRODUCTS ON

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Chemilals from Nature's Wondrous Warehouse

THE ROAD TO INCREASED SALES LEADS TO STALFORT FOR .....

## CUSTOM PACKAGING



Stalfort can manufacture your formula, liquid or powder aerosol concentrate and fill with an inert compressed gas or conventional propellant.

Pastes, liquids, or powder manufactured and packed in conventional containers.

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STALFORT & SONS, INC.

Manufacturing Chemists since 1868



### Year after year Oronite ALKANE\* the KEY to highest quality **SYNDETS**

- · liquid or dry household or industrial
  - · continuous or batch processing · oleum or SO3

During the evolution of synthetic detergents as superior washing products -Oronite ALKANE has remained the world's leading raw material, regardless of end use or processing

You will also find Oronite foremost in providing assistance on detergent processing. Whatever you have in mind, chances are Oronite has the background experience and technical know-how to be of most help to you.

It will pay you to get the detergent story from the leader. Just contact the Oronite office nearest you.

\*Trademark for detergent intermediate.



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# After Closing

#### Supreme Court Rules on Soap Antitrust Suit

THE government suit charging monopolization of the soap and detergent business will be reinstated as a consequence of a Supreme Court decision handed down early this month. Defendants in the antitrust suit are Procter & Gamble Co., Cincinnati: Lever Brothers Co., Colgate-Palmolive Co., and the Association of American Soap and Glycerine Producers, Inc., all of New York.

The three soap companies were investigated by a grand jury in 1951 and 1952. No indictment was returned. On Dec. 11, 1952 the government brought a civil action against the companies and against the Soap Association. The suit asked that the three soapers be kept out of the association and that each of the firms be split up into smaller entities. After three years of various delays the soap companies asked to see the grand jury minutes which had been used by the government to prepare its case. Judge Alfred E. Modarelli of Federal District Court in Newark, N. J. directed the government to produce the minutes. Rather than comply the government permitted Judge Modarelli dismiss the case and appealed to the Supreme Court.

In its decision on June 2, 1958, the Supreme Court ruled that a defendant in a civil antitrust suit is not entitled to free access to the grand jury minutes, which the government used to prepare its case. The Supreme Court's vote was six to three. In the majority opinion, Justice William O. Douglas wrote that one reason for this decision "is to encourage all witnesses to step forward and testify freely without fear of retaliation.

"The witnesses in antitrust suits may be employes or even officers of potential defendants, or their customers, their competitors, their suppliers," he said.

Grand juries do have subpoena powers, which the Justice Department does not, it was pointed out.

Chief Justice Earl Warren and Justices Hugo L. Black, Tom C. Clark, and William J. Brennan, Jr., joined in Justice Douglas' opinion. Justice Charles Evans Whittaker concurred in an opinion of his own. He suggested that a rule be established that when a grand jury fails to return a true bill, its proceedings should be sealed and impounded by the clerk of the court and be made subject to inspection by any party to a civil suit only upon order of the court.

Commenting on the Supreme Court's decision Howard J. Morgens, P & G president, said: "In effect the Supreme Court's action returns this case to the District Court where it began in 1951. As we stated then, we are confident of our ability to prove in court that the soap industry has traditionally been one of the most competitive in the country and that the charge of restraint of competition in the soap industry is baseless."

#### **Wood Appoints Morgan**

Appointment of Peter Morgan to the newly-created post of general merchandising manager of G. H. Wood & Co., Ltd., Toronto, was announced recently by W. E. Vaughan, executive vice-president. Mr. Morgan will headquarter in Toronto and will be responsible for directing and coordinating the merchandising activities of the company. Wood manufactures and distributes household cleaning spe-



Peter Morgan

cialties and industrial sanitation products.

Mr. Morgan will be closely associated with Harold L. White, general sales manager, and other sales management executives and agents throughout Canada.

#### **Durez Self-Operating Unit**

Durez Plastics Division of Hooker Chemical Corp., has been made a self-operating unit of the company, it was announced recently by Thomas E. Moffitt, Hooker president. As part of the decentralization, production, sales and profits now become a division responsibility. The three facilities involved are the Durez plant at North Tonawanda, N.Y., manufacturing synthetic resins and molding compounds; the Kenton, O., plant, which manufactures phenolic molding compounds; and the Spokane, Wash., plant.

Mr. Moffitt said that Hooker staff departments such as purchasing, advertising, public relations, and accounting and legal will continue to provide the major needs of the division in these areas. General policy direction for industrial relations, sales and related functions, also will continue to be administered from the Niagara Falls main office of Hooker.

Under the new operation, Dr. Jay C. Searer, formerly division works manager, becomes division general manager reporting to the president. Alfred W. Hanmer, Jr., continues as general sales manager, while Charles Y. Cain, formerly administrative assistant to the general sales manager, becomes assistant general sales manager.

Mr. Moffitt said that "since 1955 Hooker has nearly tripled in size and decentralization is considered advisable to achieve maximum efficiency in operations. This is the first of several steps to be taken in due time for effective decentralization," he added.

#### International Expands

International Wax Refining Co., Valley Stream, L.I., N.Y., has acquired the ceresin, ozokerite and micro wax accounts of the Wax Corp. of America, Brooklyn, N. Y., and the Distributing and Trading Co., New York, it was announced recently. Terms of the acquisition were not disclosed. The materials are used in formulating floor polishes, cosmetics and related specialty products.

#### **Shampoo Buying Habits**

About 86.7 per cent of all shampoo purchases are made by women, according to a recent survey by McCall's Magazine, 230 Park Ave., New York 17. Of these purchases 48.1 per cent are made in supermarkets and 33.4 per cent in drug stores.

Women buy 96.6 per cent of all spray hair fixatives. 51 per cent of the sprays are bought in drug stores and 22.3 per cent in supermarkets.

Other hair care preparations are included in this survey which is entitled: "McCall's Drugs & Toiletries Purchase Diary Study." Copies are available.

#### Lueders Elects Beauchamp

George Lueders Co., New York essential oil and aromatics firm, announced late last month election of Wilfrid F. Beauchamp as a director of the firm. Mr. Beauchamp, vice-president in charge of Lueders' Montreal branch, succeeds the late F. Weber. Election of the new director was announced by Frederick J. Lueders, president and treasurer.

#### Soap Coupons for New York City Subway Ride

B. T. Babbitt Co., New York soap, detergent and chemical specialties firm and the New York City Transit Authority have become cosponsors of a campaign to promote Babbitt products along with subway and bus riding.

Under the slogan "Buy 3—Ride Free," the campaign will get under way July 1. Every can of five leading Babbitt products sold in the metropolitan area will carry a special coupon. Three of the coupons will be good for a free token at any subway exchange booth or for a ride on any bus operated by the authority. Period of redemption for these free ride coupons will run until Dec. 31, 1958. The authority will collect five cents from Babbitt for each coupon it receives.

Approximately seven million cans will carry the free ride coupon in the initial stocking up of retail outlets, Babbitt estimates. Products included in the scheme are "Bab-O," "Glim," "Cameo" copper cleaner, "Air Gene" room deodorant, and "Hep" oven cleaner spray.

"Buy 3-Ride Free" will be

supported by an extensive advertising campaign in newspapers, radio, TV, and on the subway and bus lines. Point-of-sale material will be displayed in 2,000 retail outlets.

Marshall S. Lachner, president of Babbitt, and Charles L. Patterson, chairman of the authority, jointly announced the program. Mr. Lachner indicated that he first conceived the idea when the authority's financial problems were publicized in the press last year. Mr. Patterson expressed the hope that other businesses might follow suit.

Another joint attempt by Babbitt and the authority to make subway rides more attractive is still in the experimental stage. "Air Gene" deodorant was placed in a number of "A" line cars in the IND division. Apple blossom fragrance was chosen for the initial tests. The product comes in the form of ceramic discs saturated in the concentrated fragrance. A disk is hung in a bracket outside each of the two motormen's cabs in a car.

Marshall S. Lachner, left, president of B. T. Babbitt Co., New York, with Thomas C. Butcher, president of Brown and Butcher, New York advertising agency, and Charles L. Patterson, chairmon of the New York City Transit Authority, examine advertising material Babbitt Co. is using to increase subway riding. Five Babbitt products carry coupons worth subway tokens.



SOAP and CHEMICAL SPECIALTIES

#### **New Fuller Brush Plant**

Construction of a new \$5,500,000 plant in East Hartford, Conn., by Fuller Brush Co., Hartford, was announced recently by A. Howard Fuller, president. Ground breaking will take place this summer. The plant is expected to be ready for occupancy by the fall of 1959.

The new one-story building, which will occupy about 10 acres of a 60 acre site, will provide about 360,000 square feet of manufacturing, storage and office space. It will replace the existing plant and office in Hartford, which is comprised of many buildings varying in height from two to four stories.

Enclosed truck wells and railroad sidings will be capable of accommodating simultaneously 13 truck-trailers and 10 freight cars. The entire site will be landscaped and parking facilities will be provided for 500 automobiles.

The design of the building will be modern in concept. Exterior walls of the office portion will have aluminum window wall units with colored, insulated porcelain enamel panels. Exterior walls of the manufacturing area will be of face brick construction with steel sash, topped with aluminum rib siding. This section, approximately 1,100 feet by 300 feet, will have only one wall, which will separate manufacturing processes from the shipping and storage areas.

#### "Pluronic" Price Cut

Reductions in the prices of "Pluronic" and "Tetronic" series surface active agents were announced last month by the M.A. Division of Wyandotte Chemicals Corp., Wyandotte, Mich. These products are now shipped on a freight prepaid and allowed basis within the United States. In addition to savings effected by this change, actual price reductions for the "Pluronic" series amount to one cent per pound in drum lots for most grades, and approximately 1/4 cent per pound for some grades in tank car quantities.

Tank car prices for the "Te-



Top photo shows architect's drawing of the new \$5,500,000 plant to be built by Fuller Brush Co. in East Hartford, Conn. Construction of the ultra-modern one-story structure, which will replace the compuny's present headquarters in Hartford, will begin this summer. The plant will occupy about 10 acres of a 60-acre site, In bottom photo, A. Howard Fuller, right, president of Fuller Brush, and Lester H. Carl, vice-president, inspect a scale model of the new plant. The unit is expected to be ready for occupancy by the fall of 1959.

tronic" line have been cut 11/4 cents per pound; car lots three cents per pound; and less than car lots four cents per pound for most grades. Detailed price sheets for each of the two series of block polymers are available upon request.

#### **New C-P Newark Office**

Colgate-Palmolive Co., New York, has moved its Newark, N. J., sales office to new quarters in a recently-constructed [16-story building at 494 Broad St. The company will occupy a portion of the fifth floor of the new structure. The office formerly was located at 60 Park Pl.

#### Vinacke SPAA President

Harold Vinacke, Jr., group head in the office methods planning department of Procter & Gamble Co., Cincinnati, recently was elected president of the Cincinnati Chapter of the Systems and Procedures Association of America.

#### Barrett Div. to Be Divided

Two separate divisions will be created by Allied Chemical Corp., New York, to manufacture and market the product lines now handled by its present Barrett Division. Barrett's lines of roofing, building and paving materials will continue to be manufactured and sold under the Barrett Division name. H. Dorn Stewart will be president of the Barrett Division. Mr. Stewart, formerly with Armstrong Cork Co., joined Allied in April as assistant to the executive vice-president.

Manufacture and sale of plastics, resins and industrial chemicals, formerly handled by the Barrett Division, will be conducted by the Plastics and Goal Chemicals Division, T. J. Kinsella, head of Barrett since 1952, will be president of this division.

Allied operates more than 100 plants in the United States and Canada, producing over 1000 products. Its principal operating divisions include Barrett, General Chemical, National Aniline, Semet-Solvay, and Solvay Process. These divisions joined in 1920 to form Allied Chemical. The Nitrogen Division was established in 1952 from part of the sales organization of Barrett and certain manufacturing operations of Solvay Process. An International Division was formed in 1955 to market products outside the United States.

#### Plax Names Griffith

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Richard S. Griffith has been named to the newly-created position of assistant product manager of industrial containers for Plax Corp., Hartford, Conn. He formerly was an engineer with the firm's technical service department. He joined Plax in 1955. The company also announced the appointment of John W. French as manager of product development for its film and sheet department.

#### White King Names Aitken

William G. Aitken has been appointed advertising manager for Los Angeles Soap Co. and White King Soap Co., Los Angeles, Calif., it was announced recently by William Jay, executive vice-president.

Mr. Aitken had been acting advertising manager since Sept. 1957, succeeding Larry W. Nolte, who entered the agency field. Prior to that he had been assistant advertising manager with the soap and detergent firm.

William G. Aitken



#### Three Turco Appointments

Appointment of a new vicepresident of marketing, a general sales manager and assistant market1936 as a general salesman. After serving as district manager, zone manager, and assistant sales manager, he was named national sales







D. T. Buist

A. K. Beard

S. Van Dyne

ing vice-president was announced recently by Turco Products, Inc., Los Angeles, manufacturer of chemical processing compounds. Elected as marketing vice-president is Daniel T. Buist, for the past seven years Turco's sales director. Appointed general sales manager is Archie K. Beard, who for the past 10 years has held various sales supervisory posts. Named as Mr. Buist's assistant is Stewart B. Van Dyne, who held a similar post during Mr. Buist's tenure as sales director.

Mr. Buist joined Turco in

director in 1950. Two years later, he was named to his most recent post, as well as to Turco's board.

Mr. Beard came with the company in 1945 as a process engineer. He was appointed a district sales manager in 1948 and in 1956 was transferred to the home office as sales manager. Mr. Van Dyne has been with Turco since 1945 and served in the export, pricing and contracts departments before becoming manager of national accounts. In 1951 he was named administrative assistant to the director of sales.

#### **New Frazier Slip Meter**

A new device for testing antislip quality of all types of flooring was introduced recently by Frazier Engineering Co., Houston, Tex. Called "Safe Test," the new meter is designed for use in industrial plants and institutions. Further information may be obtained from the company, 361-362 M&M Building, Houston, Tex.

#### Alpha Line Change

Arrangements were completed last month for Arthur Colton Co., Detroit, to manufacture, sell and service the line of aerosol loading equipment previously made by Alpha Engineering Works, Inc., Mt. Prospect, Ill. The Alpha organization will continue to do engineering, research and development work on aerosols.

A new trade name, "Colton-Alpha" has been adopted for the equipment made under the new arrangement, it was revealed in an announcement made jointly by R. B. Stanley, president of Alpha and K. B. Hollidge, executive vice-president of Colton.

A division of Snyder Tool Equipment Co., Arthur Colton Co. is a major producer of ingredient fillers for all types of packaging operations.

Included in the Alpha line are the following pressure packaging machines: single-station and rotary type high speed pressure fillers for use on both fluorinated hydrocarbon and hydrocarbon propellants, nitrogen gassers and testers, rotary shaking and processing equipment, and single-station and rotary high speed crimpers and vacuum crimpers.

#### **New Type Urinal Block Sanitizes**

A URINAL block said to combine deodorizing and sanitizing action by release of a controlled amount of chlorine has been developed and patented by Davies-Young Soap Co., Dayton, O. The product is being offered by Davies-Young under the trade name "Deochlor".

"Deochlor's" action as a deodorant is based on the germicidal activity of chlorine. The washroom odor problem does not arise from freshly voided urine itself. It is created by ammonia and other evil smelling compounds formed in the process of urine decomposition by bacterial attack. If the bacteria are killed promptly the sources of odor will not be formed.

The new compound is a solid mixture of dichlorodimethyl-hydantoin with a non-reactive, water insoluble or substantially water insoluble organic solid. A block molded from this compound releases chlorine when wet. The rate of chlorine release can be controlled by modification of the solid base. Chlorine is freed as the hydantoin decomposes.

Rate of decomposition is governed by the formulation and the length of time the block is submerged in water. Up to 168 parts of chlorine per million parts of water have been proven, according to the manufacturer. This approximates two parts per million which is accepted for "good" sanitation. Lasting properties of the "Deochlor" block are said to be comparable to that of the conventional para block. No noticeable chlorine odor is said to develop.

Laboratory experiments run under simulated use conditions indicate a 75 to 95 per cent reduction in bacterial count on minimum contact and 99 per cent on contact over a period expected under use conditions. The count is claimed to remain at a negligible level for at least 18 hours after contact.

The blocks are currently available from Davies-Young in a four ounce size. One or two blocks are placed in the urinal. In flush type toilets a block is placed in the reservoir. Chlorine is gradually released in the water and becomes effective upon flushing. Blocks with wire hangers will be available shortly for use in toilets directly connected to the water lines.

Davies-Young emphasizes that the use of these blocks does not eliminate the need for regular sanitary cleansing of the fixtures. The blocks come 12 in a tube; 12 tubes in a case are priced at \$29.50.

#### P&G Profit Up

Procter & Gamble Co., Cincinnati, recently reported a net profit of \$56,343,773 for the nine months ended March 31. This was equal to share earnings of \$2.75. In

the same period last year the company had a net profit of \$51,520,833, equal to common share earnings of \$2.63.

#### **Greeff Appoints Two**

Harry Y. de Schepper and Charles E. Griffith have been elected vice-presidents of R. W.





H. Y. de Schepper

C. E. Griffith

Greeff & Co., New York sales agents, it was announced recently. Both men have been with the company for more than 20 years and are also members of the board of directors.

#### Dairy Aids to Be Shown

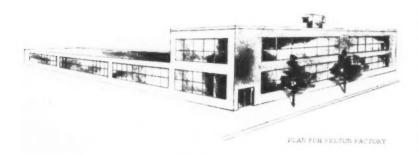
The 21st Dairy Industries Exposition will be held at the Navy Pier in Chicago Dec. 8-13. Dairy cleaners, containers and equipment will be among the wide range of exhibits. The show is sponsored by the Dairy Industries Supply Association.

#### New Colgate Lab Cleaner

A new detergent compound, designed especially for use on laboratory glassware, instruments and other equipment was introduced recently by the Associated Products Department of Colgate-Palmolive Co., New York. "Coleo" is an anionic detergent compounded with a wetting and penetrating agent for fast and thorough action. The product is claimed to have high detergency, good solubility and rinsability. It is suggested for use in laboratories where cleanliness requirements are rigid such as hospital, clinical, pharmaceutical and other industrial laboratories.

One rounded tablespoon to one gallon of water is said to make an effective cleaning solution. The product comes in five pound cans and in 50 and 100 pound drums.

Architect's drawing of new plant to be constructed in the near future by Felton Chemical Co., Brooklyn, N. Y., on a site adjacent to its present quarters. The new unit, which will furnish additional manufacturing space and expanded laboratory facilities, will increase Felton's production capacity by 45 per cent. Because of the need for increased manufacturing facilities, construction of the new plant will begin approximately one year ahead of schedule, the company announced.



#### **Durez Appoints Dent**

Harry N. Dent, Jr., has been named district sales manager for Durez Plastics Division of Hooker



H. N. Dent, Jr.

Chemical Corporation, North Tonawanda, N. Y., it was announced recently by Alfred W. Hanmer, Jr., division general sales manager. Mr. Dent will be responsible for sales of phenolic and polyester molding compounds, phenolic resins, and "Hetron" polyester resins in parts of New York State, western Pennsylvania, Ontario and Quebec. Mr. Dent became a salesman for Durez in 1948 and in 1956 was transferred to the company's product application group.

#### **Ungerer Names Dittrich**

Frank F. Dittrich has been elected treasurer of Ungerer & Co., New York, it was announced recently by the board of directors.

Frank F. Dittrich



Mr. Dittrich formerly was controller and has been with the firm for over 16 years. He is also secretary-treasurer of the Essential Oil Association of the U.S.A.

#### **Bowers Guest Speaker**

Alston G. Bowers, president of Pioneer Manufacturing Co., Cleveland, was guest speaker at the sixth annual banquet of Gilmour Academy held at the Hotel Carter, Cleveland, May 13. Mr. Bowers became president of Pioneer March 1, 1957. The company makes waxes, floor finishes, polishes, disinfectants and deodorants for sale under its own trade name and under private label through distributors. For 16 years prior to joining Pioneer, Mr. Bowers was with Gerson Stewart Corp., and Hunt Mfg. Co., Cleveland.

Alston Gordon Bowers



#### **Surfactant Price Cut**

Price reductions were announced recently by American Cvanamid Co., New York, for all grades of "Aerosol" surface active agents. "Aerosol OT" 75 per cent, the most widely used synthetic surface active agent in this line, now costs 45 cents a pound in minimum quantities and 35 cents a pound in tank wagon quantities. This represents a price cut of 23 cents a pound. Reductions for other grades range from 40 cents to two cents. Cyanamid points out that the cut in price coincides with its plans for expanding facilities at Bridgeville, Pa., for increased production of surface active agents.

#### O'Brien Shulton Director

William H. O'Brien has been elected to the board of directors of Shulton, Inc., New York,



William H. O'Brien

manulacturers of toiletries, pharmaceuticals and fine chemicals, it was announced recently. Mr. O'Brien has been vice-president of finance since May, 1957. He joined Shulton in 1953 as assistant controller and assistant treasurer in 1954.

#### Sokel in New Post

Herman Sokol has been named executive vice-president of Heyden Newport Chemical Corp., New York, it was announced recently by Simon Askin, president. Dr. Sokol had been vice-president in charge of all Heyden research and development since 1951. Since that firm's consolidation with Newport last year, he has been respon-

Herman Sokol



sible for research activities of all divisions of the new concern. He joined Heyden as a research chemist in 1943.

#### Nitrous Oxide Filling Data

A new eight-page illustrated brochure describing nitrous oxide pressure filling installations was issued recently by Ohio Chemical & Surgical Equipment Co., 1400 East Washington Avenue, Madison 10, Wis. Flexibility is the main advantage claimed for Ohio's "Nitros-Pak" installations. All types consist of two cylinder banks, one feeding the gas to the pressure packaging system, the other serving as reserve. Switchover is automatic. Remote alarm systems are available showing when the switch-over occurs, and also to indicate changes in line pressure. Physical properties and pressure packaging applications of nitrous oxide are included in the informa-

#### More Methyl Chloride

Kolker Chemical Corp., Newark, N. J., has begun production of anhydrous methyl chloride at its new plant in Newark. The plant has an annual capacity of 4,500 tons. Shipments will be made from the plant in cylinders or tank cars.

"Famula 9," hair aroom and conditioner, is now being affered in an aerosol container by Charles Antell. Inc., Baltimere. The product, which will be marketed nationally, is packaged in a six sunce container which totals for 98 cents, Filling is by Aerosol Techniques, Inc., Britiseport, Cam. Can is Cown. "Spra latter," valve by Precision.



#### Rendering Co. Elects Two

Election of two new officers and directors was announced last month by California Rendering Co., Los Angeles. John F. Schoeni, Jr., becomes executive vice-president and director. Clarence G. Howell was elected vice-president, plant manager, and director.

#### **Poultry Products Ruling**

Rules governing inspection of germicides, insecticides, rodenticides, detergents, wetting agents, and other specialties used in the poultry and poultry products industries will be modified by the U. S. Department of Agriculture. The suggested amendment to the Regulations Governing the Inspection of Poultry and Poultry Products (7 CFR Part 81) appeared in the Federal Register, May 16, above the signature of the deputy administrator of the Agricultural Marketing Service.

If approved, the amendment would stipulate approval by the administrator of such products prior to their use in an official establishment. The manufacturer of these compounds would have to submit to the administrator data from an independent commercial testing laboratory. These would include a quantitative analysis and certification that the compound will not deleteriously affect the poultry and poultry products. Conditions of use and precautions would have to be specified.

The manufacturer is called upon to agree in writing to furnish periodic analyses of samples drawn by the inspector in charge of the official establishment where the compound is used. Analyses are to be carried out at one of two laboratories chosen by the manufacturer. The Administrator will either approve or disapprove the use of a particular compound after evaluation of data supplied. The department's inspection service is authorized to draw samples of compounds used in official plants and make analyses to determine conformity with the originally approved sample. If periodic analyses fail to substantiate the original data approval may be withdrawn.

The amendment was to have become effective May 24. Through the efforts of the Chemical Specialties Manufacturers Association the time has been extended. Details regarding the amendment have been circulated among CSMA members.

#### **Aerosol Suntan Lotions**

Perfumes especially designed for use in pressure packages and particularly suitable for aerosol suntan lotions are listed in a pamphlet issued late last month by Schimmel & Co., 601 West 26th Street, New York 1. As sunscreen agent Schimmel suggests "Filtrosol A" in a concentration of 10 per cent in the base before pressurizing.

#### Florasynth Acquires Bellot

Florasynth Laboratories, Inc., New York, recently announced the acquisition of Julien Bellot Laboratories, New York perfumers. Florasynth also is a manufacturer of perfume specialty compounds. Julien Bellot, head of the Bellot concern, will join Florasynth as research director of the perfume division. In this capacity, he will be responsible for development of new Florasynth fragrances. Mr. Bellot began his career as a perfumer in Nice, France, then transferred his activities to Paris, before coming to the United States about 20 years ago.

Julien Bellot



#### **Aluminum Cans for Aerosols**

Aluminum cans are now being offered to the aerosol field at prices lower than those of corresponding steel containers, it was reported recently by United States Can Corp. Newport, Ark., newlyformed subsidiary of Victor Metal Products Corp. The units are being produced at U. S. Can's recently-built \$2,000,000, 32,000 square foot plant in Newport. The first can off the new production line was a one-piece, seamless six-ounce aerosol container of lightweight aluminum with a 14/1000-inch wall thickness.

Victor Muscat, president of U. S. Can and its parent company, said that his firm is quoting a price of \$45 per thousand on the sixounce "Victor" aluminum aerosol for quantities of two million or more, and \$50 per thousand for lesser quantities. Similar metal cans currently are priced about 2.3 per cent higher, he said.

Mr. Muscat attributed the company's ability to produce aluminum cans at these prices to a fabrication process used by its companion firm, American Aluminum & Chemical Corp., also of Newport, to produce the basic material necessary for aluminum container manufacture at a price about 25 per cent lower than if it had to purchase from primary suppliers. The process is similar to that used by Victor Metal Products in producing its collapsible metal tubes.

The company currently has in operation one production line, and expects to complete installation of a second early in August. By the end of the year it will be producing at an annual rate of 50 million cans, with each line turning out 100,000 units per day. Three additional lines are planned for the future. It is anticipated that they will bring the firm's can output to about 125,000,000 cans per year.

Mr. Muscat said that the 500,000,000,000-can-a-year aerosol field was chosen for promoting aluminum cans because of its quick adaptability to change. Further-

more, aluminum containers are seamless thus minimizing the risk of leakage caused by internal pressures, an important point in pressurized packaging.

#### **Aerosol Test Tanks Data**

Two heat test tank models for pressure packages are described in a four-page illustrated folder issued last month by Wallace Co., 41 California Street, Bridgeport 8, Conn. Wallace specializes in designing and building standard and custom equipment for the aerosol packaging field.

Special features and performance data, specifications and other pertinent information are included. Tank model "HT60" tests the tightness of 60 containers per minute, "HT120" handles 120 pressure containers per minute:

Both models are said to keep containers clean, offer uniform heating, and eliminate jam-ups. They feature nylon conveyor chains and have exterior magnetic assembly to prevent rust.

### Compressed Gas Manifolds

Manifolds for nitrogen and other compressed gases are described in a 20-page illustrated catalog just issued by Air Reduction Sales Co., 150 East 42nd Street, New York 17. Manifold installations are of interest wherever an uninterrupted supply of gases is required. In addition to processing advantages such an arrangement eliminates intra-plant transportation of cylinders and saves floor space. Catalog 829, "Manifolds for Gases," is available on request.

#### New Selig La. Office

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Construction of a new building to house its New Orleans branch office was started recently by Selig Co., Atlanta, Ga., according to Simon S. Selig, Jr., president. The new structure will contain more than 10,000 square feet of floor space and the latest warehouse packing and loading facilities. Construction is expected to be completed by about Oct. 1.

#### **D&D** Completes Relocation

The consolidation of all Chicago facilities of DeMert & Dougherty, Inc., has been completed at its new location at 5000 West 41st St., Chicago. Located on an 11-acre tract, situated on the Chicago Sanitary and Ship Canal, the facilities include offices, warehouse buildings and a 5,000,000 gallon bulk storage terminal for liquid chemicals, and modern production equipment for aerosol and liquid chemical packaging. The land site was purchased last summer by D&D's affiliate, Mid-America Chemical Terminal from U.S. Industrial Chemical Co., New York, and also serves as the home base for operations of Aeropak, Inc., custom aerosol loaders, another affiliate of D&D.

Aeropak has a filling capacity of more than 1,000,000 cans per week. Its filling lines are capable of handling up to 120 units per minute. Products packaged by Aeropak include shave creams, hair sprays, deodorants, cleaning compounds and related private label aerosols.

From the new site, D&D also operates two barges with capacities of 250,000 and 360,000 gallons, which carry liquid chemicals from Gulf coast refineries to the plant.

#### **Avon Sales Increase**

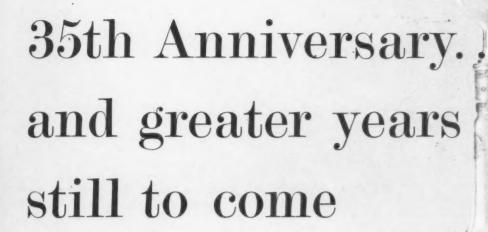
Avon Products, Inc., New York, recently reported an increase in sales and earnings for the first three months of 1958. Net sales totaled \$21,751,966, compared with \$19,578,661 in the first 1957 quarter. Net income was \$1,386,070, equal to share earnings of 45 cents. This compared with \$1,366,425 and 44 cents in the corresponding quarter of 1957.

#### Pest Control Firm Expands

L&B Pest Control Co., Olean, N. Y., will open a branch office in Altoona, Pa., in the near future, it was announced recently. The Olean firm, which recently celebrated its first anniversary, is headed by W. J. Heverly, formerly manager of the Hygienic Sanitation Co., Olean.







For 35 years Felton has made its successful products a by-word in the industry. Through resourceful and imaginative effort, and an inherent flair, Felton has achieved a position of prideful importance. In the many years to come Felton will continue to be a source of rich inventiveness and fluent skill in transforming industry needs into new developments for greater success.

Felton Chemical Co., Inc., 599 Johnson Avenue, Sales offices and plants in major cities, Canada and overseas.

Brooklyn 37, N. Y.

# HELIOTROPINES

There are no finer...Shulton, the world's leading producer, has a heliotropine to suit your particular requirements. Perfume grade, setting the highest standard in odor quality; soap grade, combining fragrance excellence with fragrance economy; and technical grade, providing a chemical of highest purity for industrial applications. Then, too, if stability of color and odor are a problem in special alkaline situations, investigate Shulton's Heliotropine Liquid.

Technical data, samples, and additional information, available on request.

SHULTON



SHUATER HE SHUATER HE MA ROCCEPTELLE PLATA





## CYQUEST 40\*

### Breaks Specification Barriers by "Braking" Troublesome Metal Ions



When the answer to that question makes buyers unhappy, and salesmen reach for tranquilizers, a special type of chemical "additive" may be able to perform a rescue act. This hero specializes in ferreting out those metal ion impurities that prevent materials from passing purchasing specifications. By a novel type of chemical legerdemain, ionic villains are made to disappear, and stay "disappeared," so that discoloration, precipitation, odor—or any type of degradation caused by multivalent metal ions—is eliminated in processes and products. These ions, you see, are now tied up so securely in stable chemical complexes that they couldn't do harm if they tried . . . and we doubt that they even want to make the effort.



#### When metals go aroving

We are describing CYQUEST 40 Sequestering Agent — a sodium salt of ethylenediamine tetraacetic acid (EDTA). It is often called on to control these "devilish" iron ions . . . and also the nickel and copper that seem so prone to leave their blissful metallic state for wild adventure in the product streams. But CYQUEST 40 is equally useful in controlling over a dozen other overly sociable di- or trivalent metal ions that cause woe.



#### Do it now...or do it later

The effectiveness of CYQUEST 40 can be deduced from two chemical facts. First, each one of its molecules seizes on a metal ion in less time than it takes to say "tetrasodium ethylenediamine tetraacetate." Second, these chelate complexes are remarkably stable to heat and to wide pH ranges. This means that you need only as many moles

of CYQUEST 40 as you have moles of metal ions present. It means, too, that CYQUEST 40 can be added at any time from the beginning to the end of a process... and whenever the process involves an aqueous phase, the troublesome metal ions will automatically be taken out of action.

#### Four examples of product upgrading

Let's look at some typical operations in which CYQUEST 40 can bring products into line with stringent specifications.

- In areas where water is "hard" or otherwise ion-contaminated, just meter CYQUEST 40 into the water supply. Not only is such treated water often equivalent to demineralized water for processing use . . . but it can also be made to have built-in protection against the unavoidable later introduction of metal ions.
- When organics are water-soluble, or contain water, CYQUEST 40 in the solution or water-phase can keep metal ions from reacting with the organic or from catalyzing other degradation reactions.
- Precipitates can be freed of metal ion impurities by adding CYQUEST 40 to the initial solution or precipitating agent. The precipitate forms as usual and the metal ions pass on through with the filtrate.
- Metallo-organics are sometimes carried over in distillation operations. CYQUEST 40 in the stillpot can prevent these volatiles from forming . . . and metal impurities are kept in the still bottom where they belong.



### If there's a gleam in your eye...

Cyanamid, alone, offers EDTA-based sequesterants in polyethylenelined Liquipak drums. The 15-gallon drums have a collapsible, capped, flexible pouring spout that makes pouring a pleasure in lab or pilot plant. The 40-gallon drum is your most economical "package of sequestering action."

For those to whom practical application of CYQUEST 40 sequestering action is as yet a gleam in the eye, we offer samples and literature—via the coupon, which we invite you to tear out now!

### SEQUESTERING AGENTS

CYANAMID

#### **MANUFACTURERS**

CHEMICALS

\* Trademark



American Cyanamid Company Manufacturers Chemicals Department 30 Rockefeller Plaza, New York 20, N.Y.

Gentlemen:

Please send me

☐ Data Sheet on CYQUEST

☐ Sample of CYQUEST

Name....

Address\_

.....

\_\_\_Zone\_

In Canada: Cyanamid of Canada Limited Montreal and Toronto



Superiority of GROCO 2 RED OIL revealed in unretouched photograph of low temperature test. Samples of GROCO 2 (left) and competitive red oil (right) were refrigerated at 36°F. for 24 hours side by side. No

solids separated out of GROCO 2 RED OIL—it remained so transparent that technician's fingers and steel tray are clearly visible through vial. On right, solid acids separated in large amount.

#### TITRE IS LOWEST IN GROCO 2 RED OIL

The unretouched photo above shows the results of a recent low temperature test between GROCO 2 and a competitive red oil. The GROCO 2 RED OIL (left) remained crystal clear to the bottom of the vial. The other material became heavily opaqued with frozen saturated acids.

GROCO 2 RED OIL's exceptionally low content of saturated fatty acids—titre 3°C.—is advantage enough in itself to make it top choice for many processors. More than one producer of a liquid shampoo, for example, prefers GROCO 2 RED OIL because it gives a formulation that stays liquid at low temperatures.

Equally outstanding is the oxidation stability of GROCO 2 RED OIL. In the Mackey Test, GROCO 2 remained under 105°C. for 5 hours. There are no oxidation discoloration problems when you formulate with GROCO 2 RED OIL. And there is an absolute minimum of unusable components, making GROCO 2 the best money value of any red oil in its class. Quality is high uniformly from shipment to shipment.

You consistently enjoy an edge in storage, handling, processing, and consumer acceptance when you "Always specify A. Gross"... whether your end products are soap, cosmetics, plastics, paints, polishes or emulsifiers.

Send for samples and brochure, "Fatty Acids in Modern Industry."

#### FATTY ACIDS

STEARIC ACIDS • COCONUT FATTY ACIDS • TALLOW FATTY ACIDS • VEGETABLE FATTY ACIDS RED OILS • WHITE OLEINES • HYDROGENATED TALLOW GLYCERIDES • HYDROGENATED FATTY ACIDS



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MORE CARBONATE
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SOLUTION\*!



# To get MORE carbonate in solution... To get GREATER reactivity...USE— SOLVAY POTASSIUM CARBONATE

Solvay Potassium Carbonate is more soluble and has greater reactivity than sodium carbonate (soda ash). This permits the use and packing of more efficient, more concentrated solutions... with savings in handling, storage and packaging. The greater reactivity of the product means better results in many uses.

These dual advantages are being utilized by users and producers of liquid soaps and detergents; producers of special boiler and other cleaning compounds; as well as chemical and textile processors.

\*At 68°F.

Sodium Nitrite • Calcium Chloride • Chlorine • Caustic Soda • Caustic Potash Chloroform • Potassium Carbonate • Sodium Bicarbonate • Vinyl Chloride • Methyl Chloride • Memonium Chloride • Methylene Chloride • Monochlorobenzene Soda Ash • Para-dichlorobenzene • Ortho-dichlorobenzene • Carbon Tetrachloride Ammonium Bicarbonate • Snowflake\* Crystals • Aluminum Chloride • Cleaning Compounds • Hydrogen Peroxide • Mutual Chromium Chemicals



SOLVAY PROCESS DIVISION

61 Broadway, New York 6, N. Y.

SOLVAY branch offices and dealers are located in major centers from coast to coast.

Solvay Potassium Carbonate is available in four convenient forms—99-100% calcined, 91-94% powdered calcined, 83-85% hydrated, 47% liquid.

Mail coupon for samples, helpful data!

#### SOLVAY PROCESS DIVISION

61 Broadway, New York 6, N.Y.

Please send me without cost:

☐ Working sample of Solvay Potassium Carbonate

THE REST LAND SHARE SHARE SHARE SHARE SHARE SHARE SHARE

☐ Solvay Potassium Carbonate fact book

Name\_\_\_\_\_

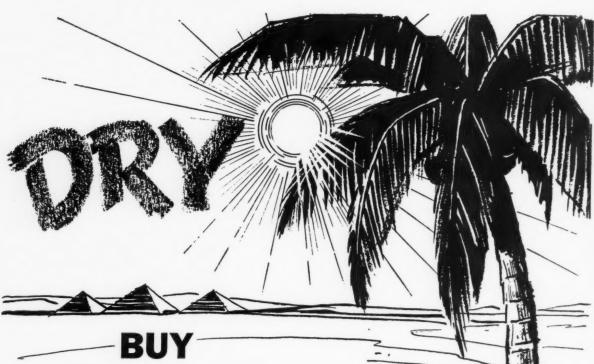
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## (the original anhydrous sodium metasilicate)

DRYMET CONTAINS NO WATER - combined or uncombined.

DRYMET yields more chemical value per pound than other detergent silicates.

DRYMET reinforces "wetting out" action.

DRYMET adds "longer mileage" to cleaning solutions.

DRYMET is a buffered alkali and resists change in pH.

Send for Drymet file folder containing complete technical data Blends well to produce non-caking longer mileage:

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- Dairy cleaners
- Laundry detergents
- Household cleaning powders
- Metal cleaners
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AMERSFOORT, HOLLAND - PARIS, FRANCE - BREMEN, GERMANY - BRUSSELS, BELGIUM - SOFLOR LTD. - PERIVALE, ENGLAND

Consistent quality starts here...

Automatic control of our new continuous-flow brine treater is double-checked by periodic thief-sampling of brine fed to our recently installed electrolytic cells. Maintaining optimum salt concentration is one of many ways we safeguard the consistent, high quality of Westvaco Caustic.

This product uniformity is *one more* good reason for you to specify Westvaco. Others are our ideal location at South Charleston, West Virginia and our unfailing willingness to cooperate with you when problems arise.

The Westvaco office nearest you will be glad to quote on a fair share of your requirements.





Putting Ideas to Work

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Westvaco Chlor-Alkali Division

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To lower costs...

use the source offering
a complete high-quality line:

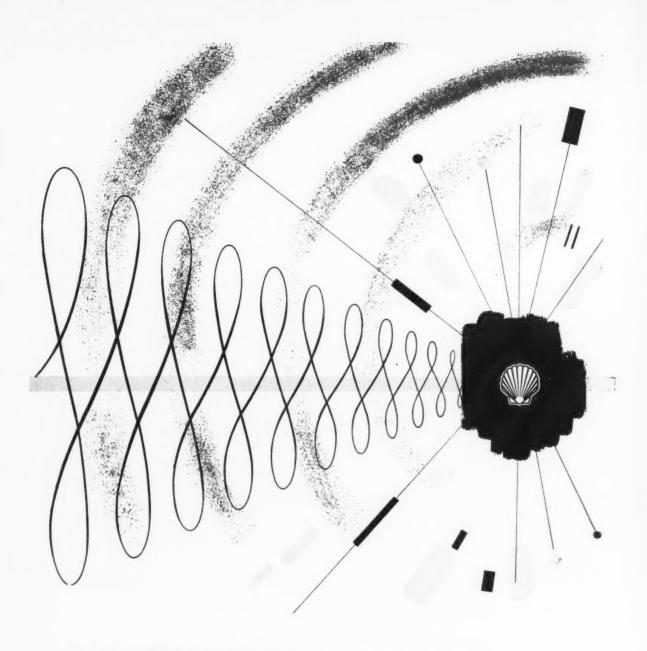
MONSANTO

## **SURFACTANTS**

FROM MONSANTO, WORLD'S LARGEST PRODUCER OF DETERGENT RAW MATERIALS
ANIONIC AND NONIONIC SURFACTANTS · ALKYL BENZENE
DODECYLBENZENE SULFONIC ACID · PHOSPHORIC ACID · PHOSPHATES

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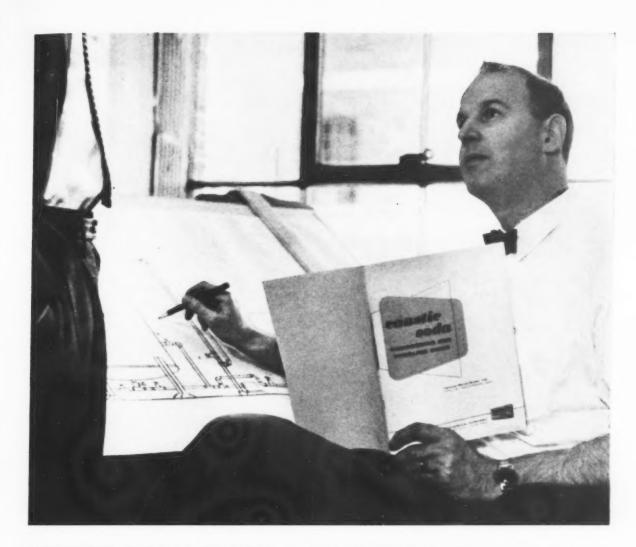
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# NEW HOOKER MANUAL helps you store and handle caustic soda safely

This new manual gives you 40 pages of information and advice on how to handle and store liquid caustic soda safely, efficiently, and with minimum risk of contamination.

#### Here are some of the contents:

- Large, detailed diagrams of equipment to use in unloading, diluting and storing.
- Commonly used methods for unloading a tank car of liquid

caustic soda, for diluting to different strengths, and for storing.

- A section on safety precautions and first aid.
- A section on materials of construction.
- 18 charts, graphs and tables to help you predict and control the behavior of liquid caustic under a wide range of operating conditions. These cover such prop-

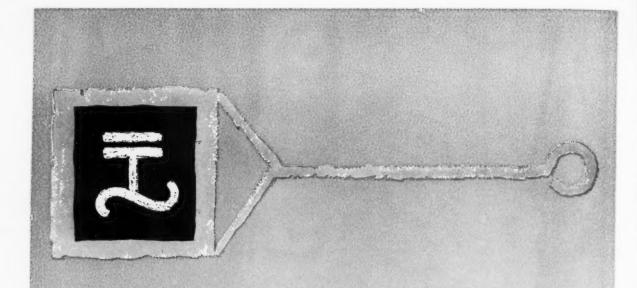
erties as dilution temperature, vapor pressure, viscosity, specific heat, etc.

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TITLE	
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STRE	ET
CITY	STATE



DO YOU UNDERSTAND WHAT THIS

BRAND STANDS FOR?

Money, it stands for, mostly.

Use good scents, Norda scents, to make money. Products perfumed for any purpose seem to have the smell that will sell, when Norda odors make them distinctive. "With Norda scents" brands the best, quite often.

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more to make it better with

# Nacconol AMERICA'S LEADING SYNTHETIC DETERGENT!

NACCONOL offers a range of 14 forms to fit every need economically
. . . flakes, beads, powders, granules and an outstanding liquid!

For maximum sales appeal, you'll find excellent money value in these unique products described below:

#### NACCONOL DBX...Super Dense Beads

Makes better-looking, more uniform mixtures. This spray-dried minimum 40% active alkyl aryl sulfonate is as dense as most flakes, is essentially dustless, free-flowing and non-caking. Yet NACCONOL DBX costs no more than flakes!

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Puts smart, eye-appeal in cleaners, shampoos, bubble baths, car washes. This clean, fresh liquid stays clear even at low temperatures. It can be attractively colored and is compatible with perfumes as well. For extra economy, it needs no added stabilizer.

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JUNE, 1958

31

# West End anhydrous SODIUM SULFATE merits your confidence for its consistent purity

Here is the new high standard of sodium sulfate quality achieved by exclusive West End production techniques and controls. The product is pure white and exceedingly low in heavy metal content. It is guaranteed 99½% minimum Na<sub>2</sub>SO<sub>4</sub> yet actually runs 99.75% to 99.8% Na<sub>2</sub>SO<sub>4</sub> typically. We invite your attention to the adjacent typical analysis and welcome your communication.

#### TYPICAL ANALYSIS

Na <sub>2</sub> SO <sub>4</sub>	1		9	9.	5	%	or	better
Na.O .								.05%
B.O								.05%
NaCl .								.07%
Insoluble	2							Trace
Loss on								
ignition			L	ess	1	ho	n	0.1%
Solution				À				Clear
Color .								White
Fe								ppm
As							11/	ppm
Cu & Zn				No	ŧ	de	ete	ctable





## West End Chemical Company

EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIF. PLANT, WESTEND, CALIF.



A NEW

ROAD TO SUCCESS

AROMATIC CHEMICALS

#### ISO-BERGAMATE "DRAGOCO"

resembles the fragrance of the bergamot oil, along with a soft fruitiness and a delicate, woody background.

#### DRAGO-JASIMIA

to accentuate fine flower scents particularly for jasmin proven essential in deluxe perfumery.

#### **LACTOSCATONE "DRAGOCO"**

provides a typical fecal note with a warm animal background and a delicate woody note



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# In Regular, Medium, and Low-Foaming Detergents ...THE KEY IS CMC

Regular, medium, and low-foaming detergents all clean more effectively and thoroughly when Hercules® CMC is included. CMC's particle-suspending properties help loosen and rinse dirt down the drain; dirt is never redeposited on clothes. That's why Essential Chemicals Company of Milwaukee, Wisconsin selected Hercules CMC for its "April," "Trust," and "Kenmore" detergents.

Essential's full line of detergent products supplies the right cleanser for hand washing fine fabrics, family laundry, or general cleaning . . . and they all depend on CMC for thorough cleansing action.

If you haven't found out yet how CMC can improve your product, write to Hercules for complete technical information and testing sample.

Virginia Cellulose Department

## HERCULES POWDER COMPANY

INCORPORATED

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SOAP and CHEMICAL SPECIALTIES

# ... in brief

DETERGENT SALES... Compared with the first quarter of 1957, sales of detergents and soaps for the comparable 1958 period were down 6.4 per cent in pounds and 2.3 per cent in dollars. But it is to be remembered that the 1957 first quarter was an exceptionally high period saleswise for soaps and detergents, the highest first quarter in six years.

During the first three months of this year, detergents continued to show sales increases at the expense of soaps. Another new high was set for the ratio of detergent sales, 72.2 per cent of the combined tonnage and 70.2 per cent in value. When a figure close to this was mentioned in soap circles ten years ago, it brought chuckles from old time soapers. Today it is a startling reality.

The decline in soap and detergent sales for the first quarter of 1958 is no great surprise. Over a forty year period, sales have moved up and down in line with our economy, mostly the figures for industrial employment. When a fellow is working, he takes more baths, dirties up more clothes. Twas ever thus and probably always will be. In the meantime, a lot of detergents and soaps are still being sold.

AEROSOL SURVEY . . . Production of non-food pressure packed products in 1957 approximated 390,000,000 units. This compares with a similarly projected estimate made by the Aerosol Survey Committee of CSMA for 1956 of 320,000,000 units. The sharp increase of 22 per cent in 1957 sales was made in the face of generally declining sales in most classes of products. The 1957 production was estimated to have a retail value of \$390,000,000.

As anticipated, aerosol hair sprays topped the 1957 list with almost 95,000,000 units, against 80,000,000 the year before. Shave lather was

second with 51,000,000, against 42,000,000 in 1956. Room deodorants were third with 42,000,-000 units, up 20 per cent. Paints and lacquers zoomed up 50 per cent to over 36,000,000 units. Glass cleaners were included for the first time this year and showed up with 11,000,000 units. Colognes and perfumes more than doubled their 8,700,000 figure of 1956.

Insecticides and moth products represented the only major classification in the survey to show a marked decline. The total for this group was down to 41,600,000 units in 1957 from \$2,000,000 the year before. This decline had been fully discounted in advance following two exceptionally bad "bug" years. The drop put insecticides in fourth place just behind room deodorants.

The value of these survey figures to every manufacturer and marketer is obvious. They reflect market trends that should help immeasurably in charting future plans by those both inside and outside of the aerosol field.

appeals court has upheld a lower court's ruling on a case in which a man died from inhaling carbon tetrachloride fumes. The widow was awarded \$160,000 by the lower court which was upheld. The man bought a gallon of carbon tet bearing the label of a local Tampa drug company and used it to clean a rug and upholstery in a closed room. Death followed.

The appeals court held that the warning label on the can of carbon tet was insufficient. It was the standard precautionary warning and merely stated "avoid excessive inhalation." The court maintained that the warning should have gone further and stated that serious illness or death might result from excessive inhalation. This was essentially the finding of the lower court.

# ..new

# flake-form nonionic detergent

Igepal DJ-970

100% ACTIVE SUPERIOR DETERGENCY



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ANTARA, CHEMICALS

A SALES DIVISION OF

**GENERAL ANILINE & FILM CORPORATION** 

435 HUDSON STREET . NEW YORK 14 NEW YORK

SALES OFFICES: New York \* Providence \* Philadelphia \* Charlotte \* Chattanooga \* Chicago
Portland, Ore \* San Francisco \* Los Angeles, IN CANADA: Chemical Developments of Canada, Ltd., Montreal

Igepal ® DI-970 manufactured by General Aniline & Film Corporation is sold outside the United States under the trademark Antarox® DI-970

Igepal DJ-970 flakes dissolve quickly, do not gel, are brittle rather than waxy and have a high melting point  $(52\,^{\circ}\text{C}/125\,^{\circ}\text{F})$ .

Results of tests prove that a built detergent containing Igepal DJ-970 exhibits superior detergency and substantially minimizes soil redeposition.

Igepal DJ-970 not only will help you build a better detergent, it will also be attractive to you on a cost basis. We suggest you send for a free testing sample and complete technical literature.

Igepal DJ-970 is also available as a solid packed in drums.



In the present status of precautionary labeling in this country, this latest decision becomes extremely significant to all marketers of chemical specialties, particularly where there is any product hazard. This case spells things out rather clearly. Any manufacturer or marketer of any chemical product could find himself in the same boat, especially if his name appears on the label.

This latest court decision should alert manufacturers and their distributors to the legal dangers involved in marketing any and all chemicals where a health hazard might be involved. It should bring an immediate checking and revision of labels even where it is believed they meet ordinary industry standards. New standards may be needed,—and fast.

FAIR TRADE . . . A Federal fair trade bill was recently introduced into Congress. It is known as the Harris Bill, H.R. 10527, and would legalize price maintenance on identified products throughout the United States. The bill would give manufacturers the right to establish minimum resale prices for their products and eliminate the need for various state laws of the same type and the current federal enabling act. Naturally, it would apply only to products which Congress lawfully may regulate, that is products sold in interstate commerce.

For some reason, we have the feeling that this legislation is sort of hopeless, that it comes too late, that it will not solve the problem of vicious retail price cutting. Even under a Federal law, those manufacturers who choose to fair trade their products, and any action under this proposed law would be wholly voluntary and not compulsory, would still be at the mercy of every predatory retailer. And those retailers who are not predators today by very dint of necessity to survive, we feel, are few and far between.

With relatively few exceptions, the difference between a product which sells at one dollar and a competitive one which sells at 89 cents is still eleven cents, eleven cents remaining in Mrs. McGuff's pocketbook. It's a tough hurdle to get over for the fair traded item. In present retail selling in the U. S., if it may be dignified by the term, "selling," we have a hunch the cards are well stacked against any form of retail price maintenance.

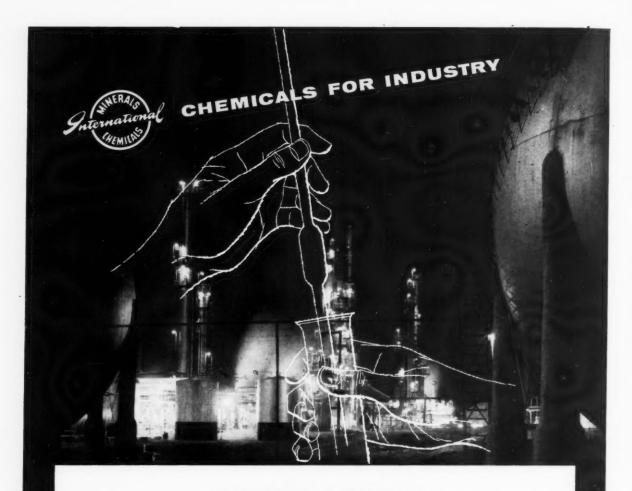
SILK SCREEN . . . That silk screen printing of labels on drums and steel pails of floor products, insecticides, disinfectants and other chemical specialties has brought a wide improvement in package appearance, there is little doubt. Today private brand industrial chemical specialties vie with the lithographed containers of leading manufacturers. But to some extent, this silk screening of private brand products has become a pain in the neck. It seems that some dealers and distributors order extremely small quantities and they want the same service as is given a quantity run. Under these circumstances, silk screening is a costly nuisance.

When business falls off, manufacturers will go a little further to satisfy their customers. And this, it seems, has happened in the silk screening of private brand packages. There must be a low limit below which the manufacturer cannot go in supplying such packages. Surely, we know right now that an order is an order, and should be treated as such. But if it's an order where the cost of the package to the supplier is more than the product it contains, it looks like time to call a halt.

SURPLUSES . . . "Fully supplied markets are normal to us, not abnormal, and we must learn to live and operate profitably in such markets. An under-supplied market is not a proper one and while we might profit temporarily by high prices and shortages, it is most often a situation which is short-lived. We must face up to manufacturing and selling in fully supplied markets. . . ."

So spoke Louis Ware, chairman of International Minerals & Chemical Corp., in a recent address before the Chemical Specialties Manufacturers Assn. This should help to orient the thinking of a lot of executives in the chemical field who for the first time in years find themselves with surpluses.

As Mr. Ware points out, in the United States surpluses are normal, shortages abnormal. Surpluses make for better sales performance, for product improvement, for progress. With insufficient goods, competition dies and economies wither. In the long run, everybody is hurt. So take heart if your warehouses are bulging with goods. Maybe it will put you back on your toes where you belong.



#### **CAUSTIC POTASH**

...and other industrial chemicals with the important extra advantages of International's

EXPERIENCE RESOURCES DEPENDABILITY

You can be sure of product quality and satisfaction of service when you depend on International for industrial chemicals. For Caustic Potash. Carbonate of Potash. Magnesium Oxide. Muriatic Acid and others. International has large production resources to supply you promptly and efficiently. Specialized chemical experience to provide ex-

pert assistance in the selection of materials and grades required for greatest operating efficiencies and economies. You will appreciate the helpful, understanding service of *International's* technically qualified field men and representatives in all major industrial markets. Write or phone for specific data about *International Chemicals* for *Industry*.

INTERNATIONAL MINERALS



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485 LEXINGTON AVE., NEW YORK 17 \* MIDLAND, TEXAS \* FULTON NATIONAL BANK BLDG., ATLANTA, GA.

#### as the reader sees it . . .

#### Refreshing Honesty

Editor:

Good for you, man!

A refreshing honesty in an era of bull.

Incidentally, hadn't we better make honesty the policy-we Americans-instead of the "refreshing" exception?

We're getting so far from base we are liable to get tagged out.

R. A. Bruce

New Hyde Park, N.Y.

Mr. Bruce refers to the editorial on "New Products" which appeared in the March issue of Soap & Chemical Specialties. The editorial which prompted Mr. Bruce's note mentioned the speed with which too many new products are coming to market, many without sufficient justification, and without market research, shelf testing, etc. Ed.

#### Mistaken Identity . . .

Editor:

Amsco Chemical Company of Memphis, Tennessee is a whollyowned subsidiary of the American Snuff Company of this city. Amsco Chemical Company manufacturers "Hot Shot Insect Killer," "Hot Shot Bug Killer" and "Hot Shot Fly Bait."

In your April issue of Soap & Chemical Specialties we found a picture of our "Hot Shot Insect Killer Pressurized Spray" with a caption to the left-hand side of it stating that "New aerosol insecticide by Amsco Solvents & Chemical Co., Cincinnati, is packaged in a 16-ounce aerosol container by Crown Can Division of Crown Cork & Seal Co., Philadelphia", and other information regarding the product.

This is truly a misstatement. Amsco Chemical Company, Memphis, Tennessee, has no connection with Amsco Solvents & Chemical Company of Cincinnati, and the can pictured in this article does not have the cap on it that we use.

We would like very much to know from what source you received information on "Hot Shot Insect Killer" and why it was published without some authority from

> E. J. Adams, Purchasing Agent, Amsco Chemical Co. Memphis 1, Tenn.

Apologies are in order all around on this one. Here is what happened: 1.) we received a news release and picture from Crown Can Co. on the new "Hot Shot Insect Killer Pressurized Spray"; 2.) the release simply stated it was an "Amsco" product, without further reference to company name or firm location; 3.) we checked several chemical directories and came up with Amsco of Cincinnati; 4.) in our anxiety to get the news printed fast we neglected checking with Crown Can: 5.) it won't happen again. Amsco Solvents & Chemicals Co., Cincinnati, are marketers only of solvents and chemicals for industry including insecticide base materials and chlorinated solvents which are

used in aerosols. The firm does not package any of this type of product for retail sale according to its president, Joseph J. Van de Ryt. Ed.

#### "Xcellent"

Editor:

Speaking for Clarissa—here's the pistol. I think the editorial on "Know-How" in the May issue of Soap & Chemical Specialties was Xcellent.

Richard Ojserkis E. Ojserkis & Sons Atlantic City, N. J.

#### Surfactants Listing

Editor:

In the yearly list of surface active agents which was published in the Dec. 1957, Jan., Feb., March and Apr. 1958 issues of Soap & Chemical Specialties, although the list is fairly detailed, no mention is made of our material. While this is probably of not much importance in the United States, the wide circulation of your journal all over the world does mean that our products may be overlooked by manufacturers outside the United States who have learned to depend upon Soap & Chemical Specialties, and I am sure it would be helpful if our products could be included. Do you (Turn to Page 191)

R. W. Boedecker, manager of advertising for the associated products department for Colgate-Palmolive Co., New York, is shown as he and his wife are about to leave from International Airport, New York, aboard a Sabena airliner for visits to Holland, Belgium and several other European countries.



## If you make one-or more-of these in liquid form



## ... you'll get better results every time with

No matter what kind of liquid cleaner or insecticide you formulate, you'll find Orvus WA Paste best for the job!

A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate, Orvus WA Paste offers manufacturers excellent sudsing, wetting and emulsifying properties. Its exceptional dispersing and penetrating characteristics help make your products perform better every time, too!

Orvus WA Paste offers many important additional advantages you'll soon discover when you start formulating with this top-quality detergent.

For more information on specific applications or formulas, drop a postcard to . . .

Orocter + Jamble



Bulk Soap Sales Department P. O. Box 599, Cincinnati 1, Ohio





# Detergents... Cleansers... Soans

Aerosols
Detergents
Dishwashing compounds

Floor scrubs

Glycerine

Hand cleaners

Laundry soaps

Liquid soaps

**Metal cleaners** 

Potash soaps

Scouring cleansers

Shampoos

Shave products

Soap powders

Starch

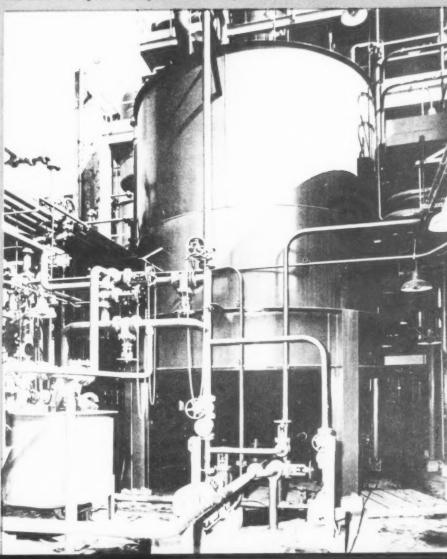
Steam cleaners

**Medicinal** soaps

**Textile detergents** 

**Toiletries** 

Toilet soaps and other detergent and soap products Ion-exchange unit at Lever Brothers' Los Angeles plant removes dissolved salts, acids, alkalis, color bodies and odor from crude glycerine solutions. This follows evaporation step. See article beginning on page 54.



# NINEX 26

SPECIALLY DEVELOPED Detergent FOR RESTAURANT DISHWASHING OR CAR WASHING



## COMPLETELY FORMULATED ANIONIC LIQUID DETERGENT... 95% ACTIVE WITH OUTSTANDING FOAM STABILITY

Here's a completely formulated blend of three chemically different detergents that saves you handling and inventory costs as well as doing the outstanding job for restaurant dishwashing and car washing. Cuts grease and other soil, leaving the surface sparkling clean. An easy dispensing liquid which eliminates the problems of dusting and caking found in powdered cleaners.

LOW COST. You save on Ninex 26 not only because of its high active and lower handling and inventory costs but also because it is priced to help you sell in this highly competitive field.

FOAM STABILITY. A big feature of Ninex 26. You'll be

very pleasantly surprised how its close knit, full bodied foam stands up even after heavy grease removal.

**UNIFORMLY PLEASANT ODOR—LIGHT COLOR.** Ninex 26 has a clean, pleasant odor and a light color which becomes virtually water white at recommended dilution.

**ADJUSTABLE VISCOSITY.** Gives proper body for use with any type of dispenser or to suit any glass container —by varying dilution and formulation.

95% ACTIVE. Here's important savings in original shipping costs. Recommended dilution gives you approximately 3-1 for retail use and 5-1 for commercial use,

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AMERICA'S MOST COMPLETE LINE OF SURFACTANTS

# Budgeting for Research

By N. B. Tucker\*

Director, Research Division Research and Development Department

> Procter & Gamble Co. Cincinnati, O.

HE spectacular growth of research in this country during the last ten years, has been limited, it seems only by the availability of trained people. Recruiting "quotas" have been objectives rather than limitations because the people to fill them either could not be found or were so hard to come by that a little spill-over didn't really worry anyone. Expansion and ways to accomplish it have dominated research planning. This state of affairs applied,

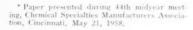
by and large, to manufacturing industry in general and in varying degrees to most of us in the chemical and related industries. Today, however, two things are different. First, we are beginning to see signs that the scarcity of trained people is becoming less acute and, this year, may be less of a bottleneck than it has been in the immediate past. Second, we are in a period which has been variously described as everything from a business readjustment to the economic doldrums.

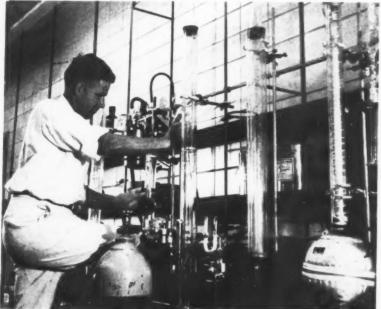
Each of the last four years has seen an increase in the number

of technical college graduates at the BS, and, less marked, at the MS levels with the new PhD supply at least holding its own. The supply situation is, then, improving. One might expect recession talk and thinking to result in curtailed demand. Actually, available evidence does not support this conclusion. Three recently published surveys (1) show that, by and large, the chemical industries are planning 1958 research budgets providing for as much or more growth than they planned in 1957-certainly not clear evidence that chemists and chemical engineers are headed for beinga drug on the market. Nevertheless, the signs are clear that the technical manpower market is not so tight. Perhaps the surveys did not cover a broad enough base, or perhaps some of the respondents have since changed their minds.

Whatever the facts and however they are interpreted, it seems that the size and growth rate of the individual corporate research effort may be returning to the realm of things over which we have some control.

Taking all these circumstances into account, it is inevitable and proper that research budgets should come under closer than normal scrutiny, both by corporate management and by the research





P&G basic research efforts are centered on studying the fundamental behavior and properties of all ingredients and compounds that might conceivably bear on the company's product line. Other objectives are to explore new materials and basic processing methods that will result in new products and to make long-range engineering studies leading to the design of new processing equipment and the improvement of existing production methods.



P&G researcher studies the arrangement of atoms in a crystal of soap with X-ray equipment.

managers themselves. And it is also inevitable that, in such times as these, the research effort finds the competition keen-the competition, that is, in the need for funds with all other phases of the business. We frequently hear questions such as "how can the research department defend its budget in this competition?" I feel sure that all of us who have some measure of responsibility for managing research would welcome all the help we can get in arriving at a proper optimum research expenditure-one that is not plush on the one hand, yet adequate to protect the company's future on the other. But useful guiding principles, defensible on the basis of experience, facts and figures, are hard to come by.

#### Lack of Data

For instance, I have been unable to find a useful standard or rule-of-thumb relating the size of the research effort to any quantitative point of reference—sales volume, total assets, net worth, number of employees, miles travelled by the sales force, or what-have-you. Research dollars as a fraction of total sales dollars is the familiar published ratio, and one can make a case for an extensive research effort by citing very successful and respected companies who report a

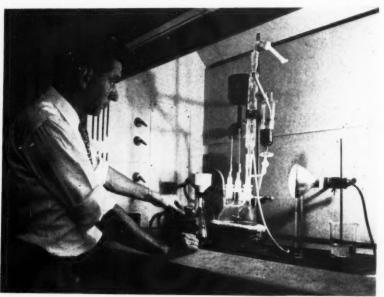
high ratio. On the other hand, one can also point to succssful business enterprises in the same type of industry whose research expenditures per sales dollar are much less. A recently published compilation (1) of projected 1958 research budgets within the chemical industry shows a spread of from one to seven per cent. for industry group averages. Individual firms' increases show a 60-fold spread from 0.15 per cent

to nine per cent. Added uncertainties arise because of different interpretations of what should be included in reported research expenses. Clearly, what is public knowledge about the experience and judgment of others is of little help toward a decision between x dollars for research versus 2x, let alone  $x \pm 10$  per cent which is usually the question.

It is not intended to imply that such figures as are available are valueless or that they should be ignored. Certainly it is comforting if one's own budget is in line with those of competition, or provocative of some sharp thinking if it is out of line either way. The point is that they aren't much help if one is trying to pin-point his effort on a plus or minus a few per cent basis. The extensive survey of industrial research recently published by the National Science Foundation concludes from its findings that research budgets still must be established on the basis of judgment. (2)

So, too, are we lacking in recognized principles for evaluating the results of research. Most schemes which attempt this are of necessity, arbitrary. For instance,

"The ultimate in efficient research is the fellow who does the last experiment first. Management thinking to the effect that research talent is expendable in hard times and can be recaptured easily when the climate is more favorable is simply out of touch with reality."— Dr. N. B. Tucker, director, research division, research and development department, Procter & Gamble, in  $\alpha$  talk at CSMA's 44th midyear meeting, in Cincinnati, May 21.





Miami Valley Laboratories, Procter & Gamble's long-range basic research center, has been expanded more than 40 percent since '52.

who knows what portion of the profits over the years on a new product from research should be credited to that research, to aggressive sales, advertising and promotion, and to astute manufacturing which produced at a favorable cost? If we are frustrated by the apparent futility of attempts to develop formulas for determining the size and evaluating the effectiveness of research, perhaps consolation is found in recalling the quotation: By its very nature, research is a gamble: the only risk greater than doing research is not doing it.

One's own experience is probably the best, and possibly the only, criterion against which to judge the adequacy of the research effort, both in quantity and quality. If the flow of new products and of product and process improvements stays just ahead of the rest of the company's capacity to exploit them, then the size of the effort is probably about right. If, on the other hand, pressure from sales, advertising or manufacturing for more grist for their mills is felt very often, that symptom is obvious, too. On a long-term basis, maintenance of this proper level of research effort is reasonably assured by an orderly expansion of the organization at approximately the same rate as other parts of the business. Such growth should assure the ability to keep the company covered and protected in the technical aspects of areas of interest.

Assume for the moment that we are in an era of belt-tightening, or at least of wait-and-see. Delaying planned expansion of research, or even its curtailment, should be considered. What we are concerned with here is recognizing clearly the important points to be considered and describing them so they come into sharp focus for everyone involved in budget decisions.

#### Safe-Guarding Research

We are, of course, concerned with protecting the strength of the research organization. And that strength depends heavily on three things:

1. An orderly growth plan, tied in some simple way to the company's growth pattern, but tied flexibly enough so that sizeable changes of objectives are neither frequent nor sudden;

2. Effective recruiting and selection procedures;

 Stability and flexibility to allow for adequate training of personnel at all levels.

All of these points emphasize the importance of stability, which is perhaps more vital to a research organization than to any other. Saving the same thing another way:

a research organization is relatively ponderous in its momentum and sudden sharp twists of the steering wheel threaten serious damage to the mechanism. Three factors tend to make this so. First, in research, personnel represents the bulk of controllable expense. Important savings can be made only by decreasing or not increasing the number of people. Second, a small number of people represent all of the experts relied on to cover an important segment of technology. It is impossible to prune many branches without damaging the tree. And, third, by definition, research activities are in new and uncharted territory. It takes a long time to make an expert and constant care to keep him one. All of these statements become more pertinent the nearer the research being considered is to the basic or fundamental end of the spectrum, but they apply in some degree to all wave lengths.

#### Importance of the Expert

Let me enlarge a little on the importance of expertism. It should be only too obvious that the more experienced and expert an organization, the better it will handle problems presented to it. In spite of this, we still occasionally hear ribald comments to the effect that research talent is expendable in hard times and can be recaptured easily when the climate is more favorable. Such thinking, if it exists, is pretty far off the beam.

A research organization should strive to have at least one man who is experienced and knowledgeable in each area of subject matter of major importance to the company. In addition, certain techniques are of broad enough usefulness to require (and to justify) an expert. In the first category we mean such subjects as natural or synthetic waxes, the design of continuous processes, the biochemistry of fats and oils, the phase behavior of soaps. As examples of techniques of broad applicability we can cite radiochemical tracers, x-ray and electron diffraction, optical microscopy, magnetic resonance spectroscopy, etc. On relatively straightforward problems the availability of experts may mean good, solid answers in time; without them the answers may be too little, too late or even temporarily misleading. On more complicated problems the difference is often that between a really useful answer and no answer at all.

Even in cases where outside contract research is chosen as the means of developing needed knowledge, there is strong reason to have an expert at home, kept up-to-date by an active program of his own in a related (though of course not duplicating) area. He is the best channel of communication to insure that the sponsor's needs and plans are most usefully transferred to the contractor and that the results of the research are brought home promptly and effectively.

#### **Need for Flexibility**

The stability needed by a research organization is not a static stability, a maintenance of the status quo. It is a flexible stability that provides for proper attention to the three points above—growth, selection and training. The organization should not be stretched to the limit in covering areas judged essential; people should not be assigned definitive rush projects to within 99 per cent of their capacity. There

must be room, individually and collectively, for some deep digging, for following the literature, for training and generally for keeping abreast of the times-above all for thinking. Flexibility that allows changes of assignment and location within the organization is necessary. A situation must be avoided which stifles a promising individual by keeping him on an important assignment because he is irreplaceable there when his training and development would be advanced by a change of scenery. And finally, there must be some cushion of capacity uncommitted to bare essentials which is available for emergency programs when they arise.

These are some of the important considerations that management should keep in mind when a temporary, intensive economy wave threatens. But obviously there is no absolute lower limit, except zero, to the size of the research effort above which it functions and below which it does not. There is some flexibility all along the line. It starts with the decision of what projects and what areas really must be kept alive. If the budget problem is acute, a tendency to lean toward shorter range goals and to delay, temporarily, work on less immediate objectives may be in order. Next comes the judgment of the level of effort needed on each project or in each area. Some belttightening is usually possible without great loss in time or effectiveness. Thus, research has some flexibility to roll with the punch without damage, only with some delay, and to maintain most of its base for continued growth and development.

Under such circumstances, there is real incentive for sharpened thinking about ways to improve efficiency. Operational efficiency is important—just better management of housekeeping details which save the researcher's time and make it easier for him to devote his thinking 100 per cent to the solution of his problems. Economy measures on laboratory supplies and equipment may be worth examining. But the

contribution of this type of approach is at best measured in per cent and maybe a very few per cent at that. The real pay-off is in the direction of up-grading personnelby training, by selection, even by elimination of the less productive. The ultimate in efficient research is the guy who does the last experiment first. (4) The contribution to efficiency made by the time saved on experiments he didn't have to make might be measured, not in per cent. but by a factor greater than 1. Sometimes the long way round is the short way home-the time for training and development of people, wrung from preoccupation with high-priority work, may well contribute a net gain to the efficiency of getting that work done.

Finally, a proper research budget will and should limit the research effort, but should not direct it. The size of the budget will be determined by management decision based partly on research department advice. The effectiveness of that advice will be measured to some extent by how successful it is in conveying a clear understanding of the importance of the points we have just discussed. If the advice is really effective, then the points of view of all those involved in the budget decisions are not apt to be far apart. The resulting answer will probably be about right.

(Turn to Page 190)



# Soap and Detergent Containers

By E. G. Astolfi, G. E. Curtis and L. M. Garton\*

Research and Technical Department American Can Co.

Part I

OAPS, detergents, and other cleaning agents encompass an extensive variety of products which serve many end uses in the home and industry. In recent years, the demand for these products in metal and composite type containers has grown at a tremendous rate. The chemical specialties industry has keyed this growth by constantly developing new formulations for detergents and cleaners, as well as by the improvement or modification of existing formulas. To discuss containers for this class of products it is helpful to arrange them into several broad categories.

Liquid detergents which account for a large share of the market in the chemical specialties field consist of two basic end use groupings—the "light duty" types, and the "heavy duty" types. Beside the usual dishwashing formulations, the light duty detergents include car washes, rug shampoos, sweater washes, and similar products. Heavy duty detergents include the many laundry and cleaning aids for institutions as well as for the home.

True liquid soaps are a distinct product category. The advent of new and improved containers may lead to renewed interest in liquid soaps in the future.

Powdered cleaning agents which include cleansers, detergents, bleaches and some water softeners, comprise another broad class of commodities with unique container requirements. Also there are many

waterless hand cleaners which require special containers.

All of these products cover a range of physical characteristics and different volumes of usage. Therefore, a variety of cans and can sizes are employed to best serve as marketing aids for the various products. Each container style with its peculiarities of available fittings and trimmings is particularly suited to requirements of the normal application of the product.

Metal cans of both round and rectangular base are used extensively. These include cans with the various screw cap, slip cover, and friction type closures with sizes ranging from less than one pint up to five gallons. Many sanitary chemical products are best packaged in fiber or composite containers. In addition to these old stand-by packaging materials, plastic fittings, combination plastic and metal containers, and full plastic containers have been introduced during the past few years.

Steel drums ranging upward in size from five gallon capacity are also widely employed by industry. The characteristics of these wholesale trade containers are beyond the scope of this discussion.

The manufacture of modern metal containers for liquid detergents and cleansing agents requires a variety of materials. Steel plate, interior enamels, and plastic parts deserve special attention. Variations



Assembled and exploded views of a round Non-Drip container with a reclosure feature provided by the plastic cap.

<sup>\*</sup> Paper presented during 44th midyear meeting, Chemical Specialties Manufacturers Association, Cincinnati, May 21, 1958.

in end sealing compounds, solders, and side seam cements are important, but they do not usually enter into the user's consideration of containers for his product.

At present, sheet steel is the structural material upon which all plates used in the manufacture of cans are based. A number of these plates find commercial application. The steel plate itself—commonly called CMQ black plate (can manufacturers quality), CMQ plate, or tin mill black plate—is used enameled because of its marked tendency to develop rust when exposed to a moist atmosphere. It is used unenameled in a few instances for products such as lye and drain cleaners.

Tin plate, the most widely used plate, is made by the application of a tin coating to the steel. Plate may be coated by dipping in molten tin or by electrolytic deposition of tin. Most commercial tin plate today is made by the latter method. The amount of tin applied is measured in pounds per base box.\* Depending on the requirements of the product, plate may have from 1/4 pound up to one pound of tin per base box applied electrolytically. These electrolytic plates are known, respectively, as No. 25 and No. 100 tin plates. Hot dipped tin plates are made with pot yields of 1.25 and 1.50 pounds of tin per base box, known, respectively, as common coke and standard coke tin plates. A tin coating weight of one pound per base box corresponds to a thickness of 60 millionths of an inch of tin on each side of the plate.

Another type of metal coated steel is called terne plate. This plate is coated by hot dipping steel sheets in a bath of 85% lead and 15% tin. The resulting product is particularly resistant to some types of chemical attack. There are instances for which terne plate is the only effective alternative. Several coating weight grades of terne plate are available, but the one common-

One gallon oblong container

ly used is the lightest grade called specially coated manufacturing terne (SCMT) plate.

A new member of the family of metal coated steel plates is zinc coated CMQ. This type of plate is unique in that the zinc is electrocoated on only one side. The zinc coated side is for the exterior of some cans to provide extra resistance to the formation of rust on sinks, shelves, and other wet surfaces upon which a can may be placed.

Chemically treated steel known in the industry as CTS plate, has been available periodically during war periods and on several other occasions. It is available now and it appears that the container industry's efforts to divorce itself from a dependence on tin will assure a continued supply at economic prices. Chemically treated steel of high corrosion resistance is made from ordinary steel plate by exposure to solutions of chromium and phosphorus compounds. The treated plate has an appearance somewhat like untreated steel but it has greatly enhanced corrosion resistance.

For some detergents, mainly the heavy duty type, metal containers fabricated from plain CTS or #25 tin plate provide satisfactory economical containers. However, most detergents are packaged in fully enameled CTS or #25 tin plate cans. The enamel coatings are necessary to manufacture a container that will hold a very reactive product successfully.

The phenolic, epon, and vinyl type enamels are the most common protective coatings for detergents. All three may be applied by a roller coater on sheets of plate and subsequently baked in ovens to cure the film. Phenolics are probably the most chemically resistant of the three coatings. This advantage is offset somewhat by the poorer fabrication properties of these coatings, their sensitivity to plate surface conditions which sometimes

#### **Oblong Containers**

Sizes	Screw Neck Sizes	Screw Neck Plocement	Screw Neck Attachment to To	Side Seam  p Construction
½ pint	5/8", 1"	at one end	Soldered	Inside or out- side soldered
1 pint	1", 11/4"	at one end or in the center	Soldered*	Inside or out- side soldered or cemented
1 quart	1", 11/4", 13/4"	at one end or in the center	Soldered*	Inside or out- side soldered or cemented
½ gallon	1", 114", 134" 40 mm Upressit	at one corner	Soldered	Inside or out- side soldered or cemented
l gallon	1", 1¼", 1¾" 3", 40 mm Upressit, 1½" C & E	at one corner	Soldered	Inside or out- side soldered or cemented
2 gallons	11/4", 13/4", 40 mm Upressit	at one corner	Soldered	Inside soldered only
2½ gallons	11/4", 13/4", 40 mm Upressit	at one corner	Soldered	Inside soldered only

<sup>\*</sup> A clinched 1 inch size nozzle can be obtained on the pint and quart cans.

 $<sup>^{\</sup>circ}$  A base box is an industry term for 112 sheets of plate 14 x 20 inches in size, thus a plate area of 31,360 square inches or 62,720 square inches of total surface.

results in poor adhesion, and their susceptibility to scratching. For these reasons phenolics rarely can be used to good advantage on can parts requiring extensive forming operations.

ıe

Epon coatings are applied with heavier film weights than phenolic types. They have excellent chemical resistance, especially to strong alkalis, and overcome some of the fabrication disadvantages of the phenolics. They have good adhesion to plate surfaces and excellent fabrication properties.

Vinyl type coatings are excellent as top coats over phenolic, epon, or other type base coats for products requiring maximum protection. They cannot be applied directly to plate surfaces but depend upon a primer for good performance. As a top coat they provide excellent chemical resistance and the best fabrication properties of the three enamel types.

In addition to considerations of plate and enamels, cans for detergents employ a plastic non-drip nozzle and plastic cap. At present a polyethylene plastic nozzle provides excellent resistance to practically all the detergents on the market. Perhaps, with the advent of new detergent formulations incorporating other materials for specialized uses, the development of more chemically resistant plastic materials for nozzles may be required.

A polystyrene plastic cap has been a successful closure for nearly all the detergent products. Occasionally they have not been satisfactory and other plastic materials have been employed. Among these are high density polyethylene, acrylo-nitrile copolymer, and ureaformaldehyde resins.

#### **Metal Containers**

The most popular container for liquid household detergents and cleansing agents is the round non-drip container which is easily recognized by its crimped-in plastic nozzle and plastic cap. It may be manufactured from one or more of the previously mentioned types of

plate and is enameled throughout on the inside. Because it has a cemented side seam construction complete outside lithography is possible. The round non-drip can is available in 12, 22, and 32-ounce sizes with a 1/2 inch opening in the plastic nozzle pouring spout. This type is common for light duty detergents or where small amounts of product are needed periodically. The heavy duty formulations are most often packaged in 16 and 32ounce non-drip cans employing a plastic nozzle with a 3/4 inch opening which allows a more convenient pouring rate for larger amounts or more viscous products. Either size nozzle has a built-in non-drip edge for neat and efficient dispensing of product. The plastic cap provides a reclosure feature and can be made from any of the plastics discussed earlier. The chemical resistance necessary for a particular product usually determines which of the plastic materials is used.

The "Accu-Por" container, a round tin plate can with either a soldered or cemented side seam is supplied in one half-pint, one pint, and one quart sizes for detergent products. The distinctive feature of this can is its drawn one piece metal top and nozzle with a one

inch opening in the nozzle. A metal cap with a liner provides a reclosure feature for the can. The liner is composed of paperboard faced with either organic or metallic foil lining materials and a felt backing.

The wide mouth, cone top container is not purchased extensively for detergents and cleansing agents. However, for special applications such as for viscous products, it does have advantages. It is manufactured in four, eight, 16, and 32 ounce sizes. It has a soldered side seam, is not enameled inside, and is constructed with a drawn one piece metal top and nozzle. Nozzle sizes of one inch and 13/4 inches are available which have a reclosure feature metal screw cap with a cap liner.

In addition to the round cans, a variety of oblong containers are manufactured for use with liquid detergent products. Among these is the oblong shaped halfgallon and one-gallon non-drip container. The demand for this can to package institutional type detergents is growing steadily, but it is also employed for heavy duty detergent products for household use. Incorporated in this can are the

(Turn to Page 106)





#### **Factors Controlling Micelle Formation in**

## Surfactant Solutions

By Jay C. Harris\*

Monsanto Chemical Co. Dayton, O.

URFACTANT evaluation methods are based generally upon the measurement of one, or a combination of surface active properties such as surface or interfacial tension, foaming, wetting, or detersive value. These effects result from fundamental changes occurring upon dissolution of a surfactant in a solvent. In considering these fundamental changes, about as basic an approach as one can take is to investigate the structure of the components of the system, and to determine effects of environmental changes upon such structure. The study of the structural components of surfactant solutions represents a specialty field for investigation which could ultimately alter the present arbitrary approach to evaluation.

Organic chemistry has bene-

fited tremendously from the concept of spatial relationship which is almost ideal in picturing molecular arrangement. Surfactants as organic compounds benefit from this concept, but when dissolution in solvent occurs, marked changes in the physico-chemical character of both the solvent and the surfactant result, and other concepts must be sought. Easily apparent changes are found in viscosity, ability to foam, and so on. Initially a variety of individual measurements were made before a theory was proposed to explain the apparent difference in the structure of surfactants in solution.

McBain (41) is generally credited with being first to suggest that surfactant molecules in aqueous solution undergo demonstrable structural changes which indicated agglomeration of molecules to form aggregates of regular dimensions;

these were called micelles.

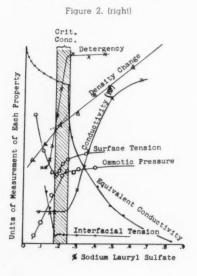
#### **Critical Concentration**

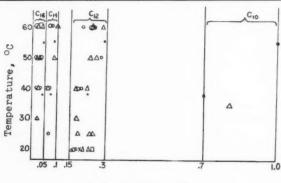
Perhaps the most important phenomenon associated with micelles is the concentration range at which they form-because at this point a surfactant operates at its near-maximum effect. Critical micelle concentration (designated variously as emc, Cmc, C.M.C., CMC, Co, and Ck, but as eme in this paper) has been defined in a practical manner (65) as the point of intersection of lines extrapolating the measured properties of the solution from below and from immediately above the region in which a rapid change of slope is observed. Critical micelle concentration is important because for any given surfactant the cmc represents a useful constant.

Critical micelle concentra-

\* Paper presented during 44th midyear meeting, Chemical Specialties Manufacturers Association, Cincinnati, May 21, 1958.

Figure 1. Physical property curves (51)

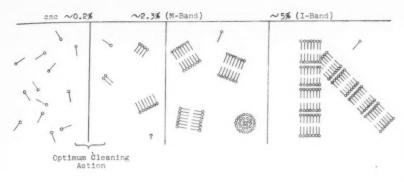




Concentration, %

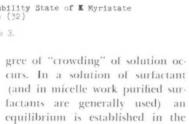
Breaks in Physical Property Curves of Alkyl Sulfates (51)

- Δ- equivalent conductivity
- D- viscosity
- ×- density
- O- interfacial tension
- o- surface tension
- ·- detergency



Schematic Diagram of Solubility State of K Myristate at Varying Concentrations (32)





solvent between the ions and (at a

Oil-Solubilized Micelle (Mattoon et al) (40)



Flaure 4. Small micelles.

tion is associated with change in physical character, and because many of the physico-chemical property measurements show more or less abrupt breaks in their curves at this point, it becomes an important feature in surfactant work. Preston (51) showed that various measurements of cmc fell within a narrow range for any given surfactant and was the first to emphasize the importance of this range, and to portray it graphically (Figure 1). While this figure was based on sodium lauryl sulfate, it is applicable to other surfactants, and has been utilized (32, 58) to illustrate this important subject. Figure 2 shows that the cmc range differs with chain length in a homologous series, so that these differences may be used in further characterizing

#### Micelles and Ionic Charges

Surfactants have been classified by type according to the ionic charge of the surfactant portion of the molecule. The surfactants of immediate interest to us are anionic, ampholytic, and nonionic (with either anionic or cationic character). Of negligible interest are cationic or anionic-cationic electro-neutral surfactants.

Ordinarily the ionic forms of surfactants (if they ionize) exist under conditions of considerable dilution. Aggregations of molecules - micelles - begin to form only when a sufficient number of molecules are dissolved so that some de-

sufficient concentration) the micelles. During micelle formation and in the presence of added surfactant, the proportion of ions remains very small, larger volumes of micelles are formed, and ulti-

Spherical Micelle (Hartley) (23) 5.7 A Lamellar Micelle (Brady) (1) OIL WATER:

Mixed Micelle of Soaps of

Different Chain Lengths (Hess) (26)

JUNE, 1958

micelles.

mately, depending upon solubility, other phases can be produced up to, and including, undissolved partially hydrated solute. Micelles exist then, over a wide range of concentrations, as shown schematically in Figure 3.

Since cmc, according to various measurements, takes place over a relatively narrow concentration range, this suggests that below the critical concentration micelles are present or forming, even though the methods for investigation are insufficiently sensitive to detect them. McBain and McHan (42) suggest these smaller micelles and depict their possible form as shown in Figure 4.

Further evidence for collolidal association at concentrations below the critical was shown by Ekwall et al (10). In performing solubilization experiments they found that for paraffin chain colloids micelle formation occurred at a point they called the limiting association concentration (L.A.C.) that lies below the cmc.

Below the point of micelle formation of sodium laurate a 1-1 electrolyte is formed (12). With increasing concentration several changes occur with the formation of anions with charges rated from 2 to 6 (12, 20):

Na Laurate M x 10 <sup>3</sup>	Charges of Laurate Anion	
0-6	1	L • HL
6-21	2	NaL • HL
21-28 (cmc)	4	3NaL • HL
28-37	6	

These charges become important in calculations of micelle size.

Goette explained the increase in cleaning action at concentrations below the cmc as attributable to the increase in valence of the aggregating soap ions before the cmc was reached: Perhaps both anion charges and small micelle formation help to account for this detergency phenomenon.

That the picture of cmc is even more complex is suggested by Hess, et al (25) who found, in measuring densities of solutions of a homologous soap series that a second transition range of concentration occurred, providing that the

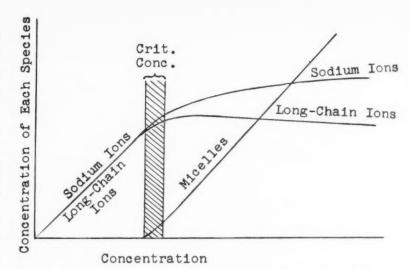


Figure 6. Effect of change in total concentration upon the concentration of ions and micelles.

molecule contained more than seven carbon atoms. In checking the long-spacing X-ray diffraction data, they showed that changes began at the same concentration where the second transition of partial specific volume set in, considering this concentration as the second critical point. Vetter (62) later, by density and viscosity behavior of the sodium salt of di (2-hexvl) sulfo succinate demonstrated two critical ranges. Further evidence (11) with other surfactants and by other methods seems to confirm this second cmc, attributed to the possible formation of a micelle different from that occurring at the "normal" or first cmc.

Preston (51) suggests that with Hartley's concept of a spherical micelle (Figure 5) only ions are present at first and increase in direct proportion to the increase in concentration. As soon as micelles appear, anion formation ceases, and some positively charged sodium ions attach themselves to, or are constituent parts (gegen ions) of, the negatively charged micelle. Preston points out that adherence of sodium ions to the micelle would mathematically necessitate, according to the law of mass action, that eventually the anion curve should fall, and support for this conclusion has been found. Figure 6 shows that the concentration of long-chain ions reaches a maximum at the critical micelle concentration, with the sodium ions continuing to increase beyond this point.

It has been suggested (35) that in the absence of distinct electrical charges on micelles of nonionic surfactants that this could be useful in simplifying interpretation of data from such systems. Goette (20) has assumed that nonionic surfactants possess some charge, even though small. The fact that they are precipitated by multivalent cations seems to support this assumption.

The gegen ion (ion of charge opposite to that of the long-chain ion within the micelle) effect has apparently been most difficult to measure. Tartar (60) indicates its importance and says that the properties of these smaller ions in solution differ widely, various factors influencing dissociation of the gegen ion from the micellar surface. Evans (13) has calculated the number of long-chain ions and gegen ions comprising micelles, from the slopes of conductivity-concentration graphs for alkyl sulfates.

At the point of micelle formation, energy is liberated by aggregation of relatively large numbers of hydrocarbon chains from the surrounding water, with re-

sultant decrease in hydrocarbonwater interface. Additional forms of energy are involved in micelle formation: strong cohesive forces (hydrogen bonding) exist between the water molecules tending to expel the hydrocarbon chain; shortrange molecular forces of the van der Waals type are involved, simultaneously bringing the electrically charged polar ends closer together; when the ionic atmospheres are made to overlap, energy is required, and here long range electrical (Coulombic) forces must be overcome. Micelles are then formed when an equilibrium is established between these forces with a loss of free energy.

Nonionic surfactants are a problem to those theorizing on micelle formation because ionic groups capable of exerting longrange electrostatic forces are lacking. Reich (53) indicated the difficulty of specifying the effect of the

gegen ion atmosphere and suggested that a theory to fit nonionic agents should precede one for ionic types. Based on the Hartley micelle structure, he proposes that for ordinary solutes the energy of the systems decreases indefinitely as the degree of aggregation increases, but that for surfactants the energy of the systems no longer decreases after aggregates reach a certain size. Further aggregation is unlikely to occur because this would involve an entropy decrease.

While Reich's (53) work indicates that nonionics form spherical micelles in which the hydrocarbon part of the single molecule is tightly curled, Howe and Benson (26A) by mechanical methods conclude that the micelle's two limiting shapes are possible: a rod-like micelle with circular cross section and a plate-like micelle. For intermediate sizes, oblate and prolate sphero-cylinders are suggested.

#### Micellar Shape

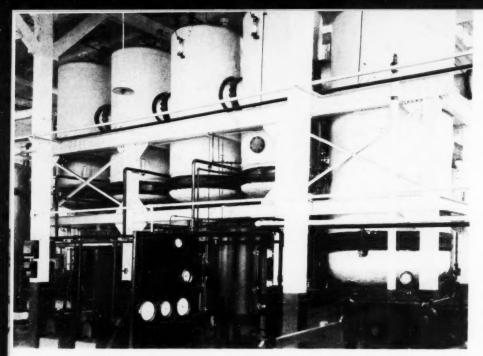
McBain considered micelles as having a lamellar structure (Figure 5, Brady) because he found by X-ray diffraction data that they possessed a structure of very regular character. It is worth noting that X-ray work concerned chiefly relatively concentrated solutions.

Micelles also occur in relatively dilute solutions and Hartley (23) is the proponent of the spherical structure concept. Shown in Figure 5 is an oil solubilized by micelle formation according to the lamellar theory (40). But the fanciers of spherical structure simply include the oil component within the sphere in association with the hydrophobic tails of the surfactant. Hess (26) provides an example of the suggested structure of soaps of different chain lengths.

Investigation of the structure of the micelle continues. The experimental groundwork seems to (Turn to Page 180)

Table I. Micellar Molecular Weight

Compound	Mols/Micelle	Micellar Molecular Weight	Method	Reference
C <sub>2</sub> F <sub>15</sub> COOH	< 10	< 4100	Equilibrium dialysis (ED)	31
CnH20COOK	30-50: 70	7100-12,000; 16,000	ED; Light scattering (LS)	31; 48
C13H27COOK	50-70	13,000-18,500	ED	31
K oleate	90	29,000	LS	48
Na octyl sulfonate	27	6,000	LS	60
Mg octyl sulfonate	48	10,400	LS	60
Na decyl sulfanate	40	9,900	LS	60
Mg decyl sulfonate	99	24,300	LS	60
Na dodecyl sulfonate	54	14.700	LS	60
Mg dodecyl sulfonate	105	28,600	LS	60
Na tetradecyl sulfonate	80	24,000	LS	60
Va decyl SO.	50	13,000	LS	60
Na dodecyl SO:	65-70; 80; 40; 57	18,000-20,000; 23,000; 11,400; 20,500	ED; LS; LS; X-ray; LS	31; 49; 36; 22; 60
Na lauryl SO:	82; 80-111	24,000; 23,000-32,000	LS; perous disk	48: 59
Va tetradecyl SO:	138	43,500	LS	60
Na dodecylbenzene sulfonate	3-5	1000-1700	LS	39
Na-3 dodecylbenzene sulfonate	57	20,000	LS	38
la 4 dodecylbenzene sulfonate	24	8,000	LS	38
la diisobutyl sulfosuccinate	8-20; 26; 24	2600-6600; 8600; 7900	ED; LS; X-ray	31; 48; 22
Na dioctyl sulfosuccinate	48: 17	20,500; 7,200	LS; LS	48; 39
riton X-100	10; 140	6,000: 90,000	LS; LS	48: 35
sooctylphenol nona- ethylene glycol ether	111	66,700	LS	39
Dodecyl nonaethylene glycol thioether	67-86	40,300-51,600	LS	39
olyethylene glyccl tall oil ester		92,600	LS	39
Polyethylene glycolpoly- oxypropylene glycol	_	8,400	LS	39



High-vacuum stills take in crude glycerine and produce various grades of finished glycerine from chemical pure quality to the high gravity types.

\*\*Glycerine Producers Assn. photograph\*\*

ALT recovered during the evaporation of spent lye always contains some glycerine. The amount so contained may vary between 3 per cent and 7 per cent and higher, according to the glycerine concentration of the liquor from which the salt has been deposited and to the efficiency of the salt box washing arrangements.

Most soapmakers are far too complacent on this point of salt glycerine. More often than not it is assumed to be a matter of minor importance whether the salt contains much or little glycerine since it is destined for re-entry into process anyway. In this loose fashion the salt glycerine is considered to be in cycle and so only temporarily lost to actual production of 80 per cent crude glycerine. Or it may be conceded that some of the glycerine is lost but that such loss is limited to the overall glycerine loss of the kettle room. For example, with an overall glycerine recovery in the soap plant of 85 per cent at least 85 per cent of the salt glycerine will be recoverable, so making the net loss 15 per cent. If such an assessment were correct the value of the glycerine so lost would not be a matter of concern and certainly it would not be of such order as to

warrant the adoption of special measures for the removal of the glycerine from the salt before returning it to process.

However, as will be shown, such an assessment is far from being correct. In fact as much as 30 per cent of the salt glycerine is lost when the conventional open pan method of soap boiling is used. This applies even when the overall glycerine recovery of the soap plant is running at a level of 85 per cent. The loss with counter current working, either in kettles, or the Monsavon plant or its like, is even higher and can be rated at 60 per cent to 70 per cent, more often than not at the higher figure.

Even at a 30 per cent loss, the soapmaker would be well advised to consider the installation of a salt washing plant in order to reduce the quantity of glycerine returned to process with the salt.

Assuming the price of 80 per cent crude glycerin to be £150 per ton, the soap maker will loose on each ton of 62 per cent soap he makes 2.5 shillings for each per cent of glycerine present in the salt returned to process. These figures apply to soap made by a counter current method. In the case of the conventional open kettle process of

#### **Efficient Washing**

## Increase

soap boiling the loss would approximate 1.75 shillings.

Hence, a reduction in salt glycerine from say 5.5 per cent to 0.5 per cent would mean savings of 12.5 per cent per ton of soap produced by the countercurrent method and 8.75 shillings per ton of soap produced by the open kettle method.

As will be described below the best method of deglycerinating salt is to give it a centrifugal treatment. It will be appreciated that the easiest way of removing the treated salt from the centrifuge is to dissolve it in water-so making a concentrated brine. Some soapmakers, for reasons unknown, do not like to use brine as opposed to solid salt in the soap pans. In such cases the treated salt will have to be removed by hand from the centrifuge. However, where such objections do not exist the production of a strong brine offers an opportunity of chemically treating the brine for the removal of certain of the impurities it may contain chiefly iron salts-before it reenters process.

It is not generally appreciated that recovered salt may contain an undesirable percentage of iron salts, and of even less desirable copper salts if the spent lyes have been concentrated in evaporators fitted with calandrias made of copper. Such impurities may be picked up by the spent lyes during their evaporation, their treatment or storage or in the soap pan itself from metal corrosion, or by the injection of impure steam into the soap pan during the process of soap boiling. The bulk of any such impurities finds its way into the salt deposited during the concentration of the lves. Therefore it is recommended

#### Methods Can

# Salt Glycerine Recovery

that a close watch should be maintained for them. When the treated salt is removed from the centrifuge in the form of brine it is easy to treat it for the removal of iron salts before it is finally transferred to the brine stock tank.

#### Counter Current Method

For reliable determination of the effect of salt glycerine on

By E. T. Webb

London, England

the overall glycerine recovery of the soap plant certain calculations have been carried out.

Calculations I and 2 apply to counter current working and 3 and 4 to conventional open pan soap boiling.

The first two calculations

show the overall recovery when a 58 per cent fatty acid soap made from 100 parts of a fat mixture containing 10 per cent glycerine, is washed six times with a spent lye production of 100 parts, i.e. one of spent lye to one of fat. The two calculations are identical and comparable in every respect apart from the one important difference that the wash liquor used in Calculation

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	Table	I						
		Calculation With glycerine free salt			Calculation 2 With salt containing 6.0% glycerine			
	Dry	Sait etc.	Glycerine	Water + Glycerine		Salt etc.	Glycerine	Water + Glycerine
6th Wash (Section 6)				6th Wash	(Section	on 6)		
182.08 parts 53.0% f.a. curd soap received from section 5 115.70 parts 10% brine containing The above mixture continuously settles to:	103.0	3.59 11.57	1.25	75.49 104.13	103.0	11.57	1.66 0.68 settles to:	<b>75.49</b> 104.13
182.08 parts $53.0%$ f.a. curd coap sent to the "fitting" pan $115.70$ parts spent lye sent to section $5$	103.0	3.59 11.57	0.50 0.75	75.49 104.13	103.0	3.59 11.57	0.98 1.36	75. <b>49</b> 104.13
5th Wash (Section 5)				5th Wash	(Section	on 5)		
182.08 parts 53.0% f.a. curd soap received from Section 4 115.70 parts spent lye received from Section 6	103.0	3.59 11.57	2.22 0.75	75.49 104.13	103.0	11.57	2.60 1.36	75.49 104.13
The mixture continuously settles to: 182.08 parts 53.0% f.a. curd soap sent to Section 6 115.70 parts spent lye sent to Section 4	103.0	3.59 11.57	1.25 1.72	75.49 104.13	103.0		ettles to: 1.66 2.30	75.49 104.13
4th Wash (Section 4)				4th Wash	(Section	m 4)		
182.08 parts 53.0% f.a. curd soap received from Section 3 115.70 parts spent lye received from Section 5 The mixture continuously settles to:	103.0	3.59 11.57	3.56 1.72	75.49 104.13	103.0	3.59 11.57	3.89 2.30 ettles to:	75.49 104.13
182.08 parts 53.0% f.a. curd scap sent to Section 5 115.70 parts spent lye sent to Section 3	103.0	3.59 11.57	2.22 3.06	75.49 104.13	103.0		2.60 3.59	75.49 104.13
3rd Wash (Section 3)				3rd Wash	(Section	n 3)		
182.08 parts 53.0% f.a. curd soap received from Section 2 115.70 parts spent lye received from Section 4 The mixture continuously settles to:	103.0	3.59 11.57	5.41 3.06	75.49 104.13	103.0	11.57	5.68 3.59 ettles to:	75.49 104.13
182.08 parts 53.0% f.a. curd soap sent to Section 4 115.70 parts spent lye sent to Section 2	103.0	3.59 11.57	3.56 4.91	75.49 104.13	103.0	3.59 11.57	3.89 5.38	75.49 104.13
2nd Wash (Section 2)				2nd Wash	(Section	n 2)		
182.08 parts 53.0% f.a. curd soap received from Section 1 115.70 parts spent lye received from Section 3	103.0	3.59 11.57	7.97 4.91	75.49 104.13	103.0	11.57	8.14 5.38 ettles to:	75.49 104.13
The mixture continuously settles to: 182.08 parts 53.0% f.a. curd soap sent to Section 3 115.70 parts spent lye sent to Section I	103.0	3.59 11.57	5.41 7.47	75.49 104.13	103.0	3.59 11.57	5.68 7.84	75.49 104.13
1st Wash (Section 1)				lst Wash	(Section	n 1)		
166.38 parts of 58% f.a. soap from saponification pan 115.70 parts spent lye from Section 2	103.0	2.02 11.57	10.00 7.47	61.36 104.13	103.0	2.02 11.57	10.00 7.84	61.36 104.13
The mixture continuously settles to: 182.08 parts 53% f.a. curd soap sent to Section 2	103.0	3.59	7.97	75.49	103.0		8.14	75.49
100.00 parts spent lye sent to glycerine department		10.00 Recov	9.50 very=95.0%	90.00	Clwas		9.70 rery = 90.2%	90.00
	Giyce	nne m	spent lye	_0.0 0	CHIACS	in ann	spent lye =	0.70 0

1 is made from salt completely devoid of glycerine whereas in Calculation 2 the salt contains 6 per cent glycerine. It will be observed that the washed soap leaving the last wash in Calculation 1, contains 0.50 parts of glycerine (line 3, section 6) whereas that leaving the last section in Calculation 2 contains 0.98 parts, (line 3 section 6). This means that the overall recovery is 95 per cent in the first case and 90.2 per cent in the second. It will also be noted that the 100 parts of spent lye made in Calculation 1, contains 9.50 parts of glycerine, against 9.70 parts in the 100 parts of spent lye made in Calculation 2 (line 4, section 1).

There are two ways of interpreting these figures. It may be said, for example, that because of the presence of 6 per cent of glycerine in the salt used in Calculation 2, the overall glycerine recovery of the plant is reduced from 95 per cent to 90.2 per cent. Or it may be said that because 0.68 parts of glycerine have been introduced with the salt used, the washed soap leaving the last section in Calculation 2 contains 0.48 more parts of glycerine. Both these conclusions would be correct. They mean the same thing.

On the other hand I suggest that it is more practical to adopt the latter interpretation. For example the loss of glycerine in the case before us is 0.48 parts out of 0.68 parts introduced with the salt and this amounts to 70 per cent.

Of course this loss has been sustained under the particular conditions assumed in these calculations. First of all the washing of the soap has been carried out with a fat: spent lye ratio of 1:1. If it had been effected with a fat : lye ratio of 1: 1.2, i.e. with the production of 120.0 parts of spent lye instead of 100.0 parts the loss of glycerine would have amounted to only 60 per cent as compared to 70 per cent. On the other hand one would be unlikely to meet a 1: 1.2 fat : lye ration in counter current working. For one thing the very small increase in overall recovery

offered by working with such a large volume of lye would not compensate for the very large reduction in the glycerine content of the spent lyes produced.

Again the figure of 70 per cent glycerine lost would be reduced if the curd soap settled after each wash contained a higher fatty acid content than 53 per cent-the one assumed in these calculationsbut, as calculations will reveal, even with the curd soap settling to 56 per cent to 58 per cent fatty acids at each wash, the loss would never be less than 60 per cent, with a fat: lye ratio of 1: 1. With a rapidly moving counter current process it is unusual to find settled curd soap with a fatty acid content exceeding 55 per cent. More often it is in the vicinity of 53 per cent. Obviously the actual loss of salt glycerine depends entirely on the ratio of the water + glycerine content of the settled soap, to the water + glycerine content of the settled lye, at each wash. Consider for a moment the figures of section 6, Calculation 2. We find that the soap entering this section contains 1.66 parts of glycerine (line 1), and the brine 0.68 parts-a total of 2.34 parts. This glycerine will be dispersed throughout the 179.62 total parts of water + glycerine contained in the soap and brine during the mixing operation, creating a glycerine concentration of 1.30 per cent. To determine the actual distribution of glycerine between the settled soap (line 3) and the spent lye (line 4) it only remains to determine the amount of water + glycerine contained in each and to allocate the glycerine at the rate of 1.3 per cent. For example the water + glycerine contained in the settled soap and spent lye (line 3 & 4) amount to 75.49 and 104.13 respectively, from which it follows that the soap will contain 42 per cent of the total glycerine available which is 2.34 parts and the spent lye 58 per cent. The same result would be obtained by allocating 1.3 per cent of 75.49 to the soap and 1.3 per cent of 104.13 to the lye. It is interesting to note that

42.0 per cent of the glycerine in the mixture (lines 1 & 2) will ultimately be carried away in the settled soap. This means that 42.0 per cent of any glycerine contained in the salt used to make the brine is virtually lost in this wash.

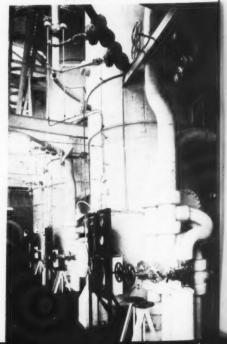
It should be made clear that the 0.48 parts of glycerine stated as being lost in Calculation 2 are irretrievably lost. Any portion of it subsequently returned with the nigre settled from the soap must be regarded at all times as being in perpetual cycle and therefore in balance.

One of the less interesting features of the counter current process is that all the salt glycerine contained in the brine is introduced into the last wash-the wash in which the dilution of glycerine is at its lowest-and it is for this reason that the initial loss of salt glycerine is disproportionately high. In the case of the conventional open kettle process a small quantity of the brine is added at each wash and this fact alone accounts for the difference in loss figures between the two processes. Any glycerine introduced into the soap by the addition of salt in the saponification stage, or prior to the crude soap entering

(Turn to Page 190)

From the scapmaking process the glycerine, salt and water combination is processed through the evaporators which remove a large part of the water and cause the salt to drop out of the solution, leaving a crude glycerine.

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"MR. CSMA" HIMSELF: H. W. Hamilton, right, long-time secretary of the association, confers briefly with A. A. Mulliken, assistant secretary, during 4th midyear meeting in Cincinnati, last month. Meeting report begins on p. 65.



# Proceedings . . .

rinted proceedings covering the 44th annual meeting of the Chemical Specialties Manufacturers Association, held December 10-12, 1957, at Hollywood, Fla., are now available for general sale to non-members of the Association.

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H. W. HAMILTON, Secretary



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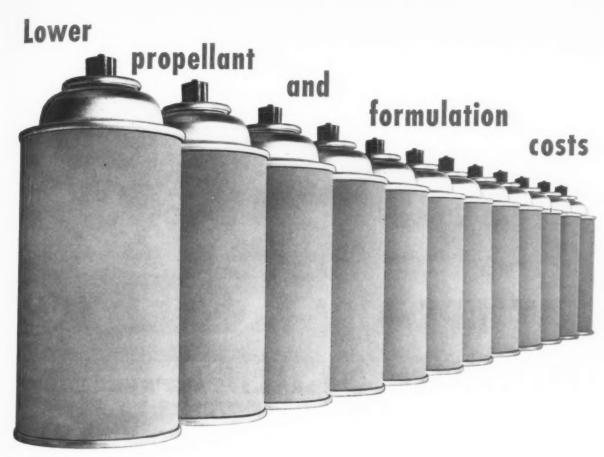
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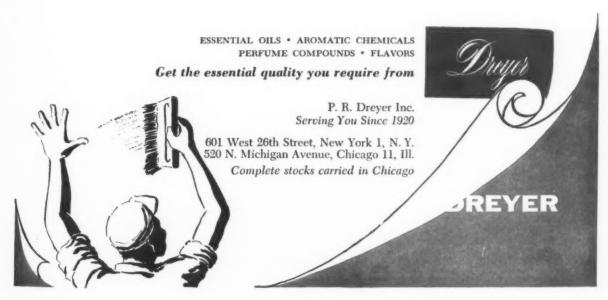
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# CSMA 44th Midyear Meeting

Precautionary labeling, 1957 product sales surveys, symposiums, election of divisional administrative committees for 1959 are Cincinnati meeting highlights

RECAUTIONARY labeling of household chemical specialties was given a thorough airing during the 44th annual midyear meeting of the Chemical Specialties Manufacturers Association in Cincinnati, May 20-21. The growing importance of this subject, which has been uppermost in the minds of many manufacturers of these products for some time, was highlighted by the announcement that one entire general session at the 45th annual CSMA meeting in New York in December would be devoted to precautionary labeling.

Other highlights of the midyear meeting were the reports on the results of product surveys for aerosols, antifreeze, brake fluid, cooling system chemicals, automotive waxes and polishes and household and industrial insecticides. This year's recession sharpened interest in the surveys, which covered calendar year 1957.

Three divisions devoted a major share of their program time to symposiums. The Automotive Division had a panel on marketing of automotive chemicals. Nitrogencontaining surfactants were discussed by a three-man group during a meeting of the Soaps, Detergents and Sanitary Chemical Products Division. The symposium of the Waxes and Floor Finishes Division looked into the current status of slip resistance measurements.

Association business conducted at the Cincinnati meeting included the revision of the CSMA constitution and by-laws to make the Precautionary Labeling a standing committee having the same status as such standing committees as Legislative, Membership and Convention. The establishment of

SPEAKERS' TABLE: Speakers and presiding officers at various sessions of the CSMA meeting in Cincinnati last month are, left to right: Donald M. King, Masury-Young Co., Boston, first vice-president of CSMA, presiding at general session, May 21; Louis Ware, chairman, International Minerals & Chemical Corp., Chicago, luncheon speaker, May 21; James E. Ferris, Hooker Chemical Corp., Niagara

Falls, N. Y., president of CSMA, presiding at luncheon May 20. Bottom row: Dwight W. Michener, economist, Chase Manhattan Bank, New York, specker at general session, May 21; Reuben B. Robertson, Jr., president of Champion Paper and Fibre Co., Hamilton, O., who spoke at same session; George W. Fiero, Esso Standard Oil Co., second vice-president, CSMA, presiding at luncheon May 21.





PRESS CONFERENCE: CSMA president, James E. Ferris of Hooker Chemical Corp., Niagara Falls, being interviewed in press room during association's annual midyear meeting.

an Organization Committee to study the dues and physical setup of CSMA was voted at the meeting and the following members of the committee were appointed by James E. Ferris, president: Chairman, Leonard J. Oppenheimer, West Chemical Products, Inc., Long Island City, N.Y.; Edmond G. Young, E. I. du Pont de Nemours & Co., Wilmington, Del.; Melvin Fuld, Fuld Brothers, Inc., Baltimore; J. L. Brenn, Huntington Laboratories, Inc., Huntington, Ind., and Donald M. King, Masury-Young Co., Boston.

A nominating committee to

name a slate of officers and members of the board of governors to be elected at the 45th annual meeting in December in New York was appointed by CSMA president, J. E. Ferris. The committee includes: E. G. Klarmann, Lehn & Fink Products Corp., Bloomfield, N. J., chairman; C. L. Weirich, C. B. Dolge Co., Westport, Conn.; Harry E. Peterson, Peterson Filling & Packaging Co., Danville, Ill.; N. J. Gothard, Sinclair Refining Co., Harvey, Ill., and Gordon M. Baird, Baird & McGuire, Inc., Holbrook, Mass.

As had been anticipated, at-

FAMILIAR FACE: E. G. Klarmann of Lehn & Fink Products Corp., Bloomfield, N. J., last year's president of CSMA, receives an oil painting of himself during board meeting May 19. The artist? Fellow CSMA director Michael Lemmermeyer, of course. Mike is president of Aromatic Products, Inc., New York, and a noted painter as well.



#### Captions: Facing Page

IN FOCUS: Top row, left to right, E. J. Black, Stepan Chemical Co.; Morris J. Root, G. Barr & Co., Herbert L. Sanders, Stepan; Douglas Atlas, Barr. Herbert Kainik, John C. Lyons and Jules Bauer, Dodge & Olcott, Inc.

Second row: Arthur Smith, Treplow Products, Inc., A. G. Bowers, Pioneer Manufacturing Co., Fred Buck, Ultra Chemical Works, Inc. Bruno W. Young, Wolfgang Sapper and F. W. Bracht, all Wax & Rosin Products, and John J. Fish, Warwick Wax Co. division of Sun Chemical Corp.

Third row: Frank W. Blodgett, E. I. du Pont de Nemours & Co.; Charles S. Stephens, American Can Co., T. D. Johnson, Jr., du Pont. George A. Isenman, Beacon Co.; Henry Blanchford, Mac-Lac Co., and Herbert A. Mellan, Durez Plastics Division, Hooker Chemical Corp.

Fourth row: Walter J. Riley, Westvaco Mineral Products Division, Food Machinery & Chemical Corp.; J. M. Hogrefe, Union Carbide Chemicals Co., division of Union Carbide Corp.; T. J. Mahoney and R. S. Wishart, Union Carbide, J. T. Perlman, B. T. Babbitt, Inc.; William C. Wood, Newport Products Co.; R. E. Horsey, Givaudan-Delawanna, Inc., and E. A. Schwoeppe, Procter & Gamble Co.

Bottom row: G. L. Hays, American Can Co., N. H. Coonen, Canco and Earl Graham, Clayton Corp., J. R. Ruston, S. C. Johnson & Son, Inc., A. E. Budner, Johnson, David Eagleson, Emery Industries, Inc., and Thomas Reilly, General Electric Co.

tendance at the Cincinnati meeting was large in spite of a business recession in the first quarter of 1958. Total registration for the meeting was 756, as against 855 in May, 1957, and 749 at the 42nd annual mid-year meeting in 1956. The latter two meetings were held in Chicago.

Administrative committees of the six divisions of which CSMA is composed elected at the meeting include:

Aerosol Division: Chairman, E. J. McKernan, Seaquist Manufacturing Corp., Cary, Ill.; Vice Chairman, A. S. Pero, Fluid Chemical Co., Newark, N.J.; Clarence Clapp, Western Filling Corp., Los Angeles; W. Earl Graham, Clayton Corp., Westfield, N.J.; D. J. Templeton, Stanley Home Products, Inc., Easthampton, Mass.

Automotive Division: Chairman, A. James Coulter, Gulf Oil Corp., Pittsburgh; Vice Chairman, C. A. Weslager, E. I. Du Pont de Nemours & Co., Wilmington, Del.; N. F. Gurley, Simoniz Co., Chicago; A. E. Tongue, Olin Mathieson Chemical Corp., Baltimore.

Disinfectant and Sanitizers Division: Chairman, Irving Gaines, Onyx Oil & Chemical Co., Jersey City, N.J.; Vice Chairman, F. R. Geib, Dow Chemical Co., Midland, Mich., Claude D'Angio, Airkem, Inc., New York; A.



Haldane Gee, Foster D. Snell, Inc., New York, and Mrs. Eleanore S. Wright, Lehn & Fink Products Corp., Bloomfield, N.J.

Insecticide Division: Chairman, Insecticide Division: Chairman, John A. Rodda, Fairfield Chemical Division, Food Machinery & Chemical Corp., New York; Vice Chairman, Alfred Weed, Olin Mathieson Chemical Corp., Asheville, N.C.; A. E. Budner, S. C. Johnson & Son, Inc., Racine, Wis.; Mark L. Hill, Gulf Oil Corp., Philadelphia; John R. Stoddard, Prentiss Drug & Chemical Co., New York. Soaps, Detergents and Sanitary Chemical Products Division: Chair-

tiss Drug & Chemical Co., No.

Soaps, Detergents and Sanitary
Chemical Products Division: Chairman, W. S. Jessop, U. S. Specialties
Corp., Chicago; Vice Chairman, L. D.
Berger, Jr., Union Carbide Chemical
Co., Division Union Carbide Corp., New
York; Hans S. Mannheimer, Miranol
Chemical Co., Irvington, N.J.; R. K.
Rigger, Wyandotte Chemicals Corp.,
Wyandotte, Mich.; C. L. Weirich,
C. B. Dolge Co., Westport, Conn.

Waxes and Floor Finishes Division: Chairman, C. S. Kimball, Foster
D. Snell, Inc., New York; Vice Chairman, Earl Brenn, Huntington Laboratories, Inc., Huntington, Ind.; A. G.
Bowers, Pioneer Manufacturing Co.,
Claveland: Gerard R. DeNapoli, Ma-

Bowers, Pioneer Manufacturing Co., Cleveland; Gerard R. DeNapoli, Ma-sury-Young Co., Boston, and Donald B. Peck, Fuller Brush Co., Hartford,

The new committees take office immediately following the 45th annual meeting in New York in December.

#### **Automotive Division**

M<sup>OST</sup> manufacturers and major marketers of automotive chemicals are not selling their products constructively, John O'Dea of Shell Oil Co., New York, told a session of the Automotive Division, May 20. His talk was part of a symposium on marketing of automotive chemical specialties participated in by John W. Elsworth, Jr., of R. M. Hollingshead Corp., Camden, N. J.; Peter M. Madeirs of Gray & Rogers, Philadelphia advertising agency, Richard Webber, Automotive News, Detroit, and Charles E. Knueppel, Sears-Roebuck & Co., Chicago. Myron A. Frank of Dow Chemical Co., Midland, Mich., was moderator for the symposium to which the whole session was devoted.

Mr. O'Dea pointed out that most of the competition that is going on in the automotive chemicals business is not the kind that increases total consumption and sales of the products. He said that the industry is not "beaming" its sales effort to the ultimate consumer.

"You may think of selling

automotive chemicals to service stations as being highly competitive," Mr. O'Dea said. "It's true that the chemical manufacturers, the accessory wholesalers, the oil companies, the tire companies and the wagon jobbers are all competing furiously for the station dealer's business. The service station trade publications are full of advertisements of special sales promotions on automotive chemicals."

"Too many of us," he said, "are just in fighting among ourselves, each striving for a bigger piece of a pretty static volume of business that each service station dealer has built up, without doing much about increasing the total volume of automotive chemicals that is being sold by all the service stations in the United States. Too many of us just seem to be thinking of the potential market in terms of the space on the retailers' shelves."

The system of selling chemicals by giving the retailer gifts for buying is not market development or salesmanship, Mr. O'Dea declared. He termed it just "aggressive order-taking". And even these premium deals are not succeeding because nearly everyone in the business is doing the same thing. The point is being reached where premium campaigns have mutually neutralized each other.

"The kind of premium merchandising I'm talking about," Mr. O'Dea said, "is not building business for the automotive chemicals industry. Not that the dealer isn't capable of selling our products. But selling the motoring public on regular use of our products is our job, not the retailers."

Mr. O'Dea pointed out that regardless of how much automotive chemicals sales have increased, justice is not being done to the potential market. With over 54,000,000 passenger cars on the road in 1956, and a potential market for about 108,000,000 cans of wax and polish, only 34,000,000 cans were sold.

A potential market of 54,-000,000 cans each of radiator cleaner and rust inhibitor was offered by 54,000,000 cars. Actually, according

Top row: left to right, Perry T. Ward, Ultra Chemical Works, Inc., Edward W. Janssen, Corn Products Refining Co., and Adair Baker, Vestal, Inc. Jack R. Kaestner, Acme Chemical Co., Milwaukee, and George J. Flanagan, Federal Varnish Divi-

Second row: Albert R. Schuster and Charles O'Connor, Shanco Plastics & Chemicals, Inc. and Richard J. Roach, Jr., Reichhold Chemicals, Inc. Donald Peatee, Mellocraft Co., Donald M. King and Gerard DeNapoli, Masury-Young Co.

Third row: Frank R. Zumbro, Freon Prod-ucts Div., E. I. du Pont de Nemours & Co.; ucts Div., E. I. du Pont de Menidurs & Co.; R. A. Fulton, U. S. Department of Agricul-ture and Francis A. Mina, Lodes Aerosol Consultants, Inc. Ralph Thomas, Bristol-Myers Co. and Clarence Carter, Continental Filling Corp.

Fourth row: Melvin Fuld, Fuld Brothers, Inc., Daniel W. Witwer and Max Potash, Polyvinyl Chemicals, Inc. Henry J. Brown-stein, Hysan Products Co. and W. D. Ackvan Ameringen-Haebler, Inc. Wiener, Fluid Chemical Co. and Claude J. D'Angio, Airkem, Inc. R. J. McKeelery, van Ameringen-Haebler, Inc., Melville G. Sutton, West Chemical Products, Inc. and Frank P. Brennan, U. S. Testing Co.

to Mr. O'Dea, "we sold 33,000,000 cans of cleaner and fewer than 19,-000,000 cans of inhibitor. As for brake fluid, how many car owners do you know who bleed and replace their brake fluid regularly? Even anti-freeze has levelled off despite a continuously increasing car population.

Pre-selling the public should enable the industry to double its sale of small package chemicals, Mr. O'Dea said. With glycol anti-freeze being used for more than one winter by more than a third or more of all glycol users, it has been estimated that anti-freeze sales could be increased by about 20 per cent, just by educating the public on the necessity for draining anti-freeze every

"What would it cost to presell the car owner?", Mr. O'Dea asked. "I don't think the cost would run any higher, based upon a percentage of our sales, than the premiums that so many automotive chemicals manufacturers are now using-unsuccessfully."

Disintectant, Sanitizers Div.

THE properties of two organic chlorine liberating bactericidal agents for use in detergent-sanitizers were discussed in a paper,



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"Chlorinated Isocyanuric Acid Sanitizing Agents" by E. M. Petrie and D. P. Roman of Monsanto Chemical Co., St. Louis. The paper was read during the May 20 session of the Disinfectant and Sanitizers Division. The two compounds, designated TCCA and DCCA, according to the authors, "offer a combination of properties found in no other chlorine sanitizing agent. Both contain high percentages of available chlorine. Both can be formulated into stable, rapidly soluble, effective sanitizing agents." In their paper, Messrs. Petrie and Roman reviewed the chemical and physical characteristics of the two materials, their compatibility with detergent raw materials, and the bactericidal action of some generalized formulas incorporating TCCA as indicative of product types that might be developed.

A relatively simple test procedure for evaluating disinfectants for tuberculocidal activity which follows as closely as possible the standard A.O.A.C. Phenol Coefficient Test Method was described in a paper by Eleanore S. Wright and Vladimir A. Shternov of Lehn & Fink Products Corp., Bloomfield, N. J. The A.O.A.C. procedure was modified so that it is suitable for testing germicidal activity against Mycobacterium tuberculosis H37 Rv. The test, which is only a screening procedure, is easy to perform and is suitable for in vitro and in vivo procedures.

"Variations in Phenol Coefficient Testing" were reviewed in a paper bearing that title by L. S. Stuart, L. F. Ortenzio and J. L. Friedl of the U.S. Department of Agriculture, Washington, D.C. The authors reported that, based on a recent repliminary survey of all A.O.A.C. phenol coefficient data compiled in the U.S.D.A. laboratories on individual samples of germicides of different types over the past 10 years, the method had "for all types of germicides tested a relatively constant coefficient of variation of approximately ±6 per cent." This figure does not include those determinations containing "wild

plus" and "skip" readings. In such cases, the authors stated, "high coefficients of variation were invariably encountered." They also pointed out that "there were as many non-quaternary preparations as quaternaries which were found to behave in this manner."

Thus, the authors state, "The information developed in these studies suggests that within one laboratory a coefficient of variation of  $\pm 6.0$  percent can be considered normal for the present A.O.A.C. Phenol Coefficient Method. This indicates that a  $\pm 12.0$  per cent variation can be permitted based on 95 per cent, confidence limits.

"In terms of regulatory enforcement this would mean that a  $\pm 12.0$  per cent tolerance for a label coefficient claim would have to be acknowledged.

"In terms of a manufacturer's labeling policy, this would indicate that the maximum claim which could be made with assurance that the consumer would receive a product possessing the activity claimed at all times should be a value 12 per cent less than the mean value established from a reasonable number of 'clear-cut' determinations."

#### **Insecticide Division**

MOST of the toxicity problems connected with house-hold insecticides have resulted from accidental ingestion, Dr. Mitchell R. Zavon of Kettering Laboratories, University of Cincinnati, told a meeting of the Insecticide Division, May 20. Dr. Zavon's paper, published under the title, "Insecticide Toxicity — A Doctor's View", begins on page 75 of this issue of SOAP & CHEMICAL SPECIALTIES.

The results of the sixth annual household and industrial insecticide survey, scheduled to be given at this session, were not presented because of incompletion due to lateness in sending in figures by some participating companies. The figures were to be released following the meeting. They will appear in

Top row: Gordon Gilroy, Precision Valve Corp., Jack Campbell, Continental Filling Corp. and Leonard S. Baer, Precision. A. Robins, Cartier Chemical Co. and Harold V. Schmidt, Federal Varnish Division.

Second row: Irwin Y. Straus, Dura Commodities Corp., Melville G. Sutton, West Chemical Products, Inc. and Charlotte R. Straus, Dura. H. F. Pierce, Hercules Powder Co., William Crissman, Olin Mathieson Chemical Corp., P. J. Reno, Hercules.

Fourth row: E. J. McKernan, Seaquist Manufacturing Corp., John Morana, Western Filling Corp., Harold F. Rilling, Precision Valve Corp., and Charles E. Beach, John C. Stalfort & Sons, Inc. Alfred Milask, Atlantic Refining Co., F. O. Robitschek, Onyx Oil & Chemical Co. and Lyons B. Ioel. Selia Co.

Fifth row: F. E. Woodward, General Aniline & Film Corp., Robert C. Ferris, Purex Corp., Warren B. Stanton and John H. Bahlburg, Jr., Wyandotte Chemicals Corp. Leslie Wizemann, National Aniline Division, Allied Chemical Corp., C. L. Wetrich, C. B. Dolge Co., Chas. E. Allderdice, Jr., Bell Co. and N. J. Gothard, Sinclair Refining Co.

Bottom row: Daniel H. Terry, Boyle-Midway Division, American Home Products Corp., Frederick G. Lodes, Lodes Aerosol Consultants, Inc., and Edmond G. Young, E. I. du Pont de Nemours & Co. Donald M. King, Masury-Young Co., Bayard S. Johnson and George Hausmann, Franklin Research Co., L. M. Argueso, Sr., M. Argueso & Co.

full in the July issue of SOAP & CHEMICAL SPECIALTIES.

#### Waxes, Floor Finishes Div.

VARIOUS control tests and production procedures being used to assure uniformity of polymers used in modern floor finishes were discussed during the morning session of the Waxes and Floor Finishes Division, May 20. In a paper, "Control Testing and Specifications of Polymers used in Floor Coatings", by Richard H. Cahill and Roland M. Avery, Jr., UBS Chemical Co., Cambridge, Mass., the authors point out that "polymers designed specifically for the floor polish industry have certain critical properties which distinguish them from general purpose latices." Included among these are small particle size, ease of removability, low residual monomer odor and compatibility with common floor wax components. In addition, these products have other desirable features such as hardness, water resistance, toughness and mechanical and





Top row: Vincent Hall, Reilly Tar & Chemical Co. and Gordon Baird, Baird & McGuire, Inc. Dr. Louis Gershenfeld, Philadelphia College of Pharmacy & Science and E. G. Klarmann, Lehn & Fink Products Corp.

Second row: Elbert E. Husted, Union Carbide Chemicals Co. and Arthur B. Chivvis, also Union Carbide and Donald Menhenett, Eveready Pressurized Products. Kurt J. Wasserman, Wax & Rosin Products, and Soi Epstein, Sole Chemical Co.

Third row: Walter C. Beard, Jr., Risdon Manufacturing Co. and John J. Buchanan, Continental Can Co. Walter Mannheimer, Miranol Chemical Co., Joseph Tomlinson, General Chemical Division, Allied Chemical Corp. and Jack Quinn. Theobald Industries.

Fourth row: Donald Menhenett, Eveready Pressurized Products Co. and Wiley Pickett, Pennsylvania Salt Manufacturing Co. John C. Lyons, Dodge & Olcott, Inc., and H. R. Shepherd, Aerosol Techniques, Inc.

Fifth row: Charles Bullock, Strahl & Pitsch and Paul Roden, Mercantile Wax. John F. Odeneal and Paul Ferguson, Fairfield Chemical Division, Food Machinery and Chemical Corp., Malcolm Zucker and Ed. Barere, State Chemical Manufacturing Co.

Sixth row: John Struthers, John Struthers & Co. and Carl D. Durant, Aerocide Dispensers, Ltd. George Hartz, Olin Mathieson Chemical Co. and R. L. Brett, Fairfield Chemical Division, Food Machinery and Chemical Corp.

Seventh row: Perry G. Bartlett, West Chemical Products, Inc., Charles R. Lichtenberg, Chicago Sanitary Products Co., George W. Fiero, Esso Standard Oil Co., and E. Scott Avery, Pennsylvania Refining Co. L. M. Argueso, Jr., M. Argueso & Co., Donald Peck, Fuller Brush Co.

heat stability. The measurement of most of these properties, say the authors, is a routine operation and needs little comment, but there are a few control tests of an unusual nature that deserve more detailed attention. The paper reports in detail on methods for determination of particle size, residual monomer content and sedimentation.

A detailed description of the film formation process of polymers was presented in a paper, "Film Forming Characteristics of Polymer Emulsions", by George L. Brown and Richard E. Zdanowski of Rohm and Haas Co., Philadelphia. In essence, say the authors, the process involves fusion of individual and discrete polymer particles into a solid mass that is expected to function as a homogenous entity called a polymeric film. The driving as well as the opposing forces of this

(Turn to Page 87)



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BTC-471(n-Alkyl (	(C <sub>12</sub> ,	C14,	C16,	C15)	dimethyl ethylbenzyl ammonium chlorides)	100	ppm
Tetrosan 3,4D (n-Alkyl )	(C <sub>12</sub> ,	C14,	C16,	C18)	) dimethyl 3,4, dichlorobenzyl ammonium chlorides) 1	100	ppm
BTC-927(n-Alkyl (	(C <sub>12</sub> ,	C14,	Cie,	C18)	dimethyl dimethylbenzyl ammonium chlorides)	000	ppm
BTC-2125					) dimethyl benzyl ammonium chlorides) and	750	ppm

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### INSECTICIDE TOXICITY

#### -A Doctor's View

By Mitchell R. Zavon, M.D.\*

Kettering Laboratories University of Cincinnati

TRIP to any grocery store, hardware store, supermarket, or drug store is all that is needed to supply a long list of insecticides prepared for household use. The interpretation of what constitutes preparation for household use may vary widely. Some insecticides may be furnished in a brown paper bag after being scooped out of a drum. Others are available in the most refined type of packaging. It is estimated that 20 per cent of all pesticides manufactured go into non-agricultural uses. What portion of this is the insecticide portion of the market, I do not know, but it is certainly appreciable.

A list of common household insecticides found in a typical supermarket or hardware store includes a wide range of chemicals (Table I).

When used in a proper manner these materials should cause little or no difficulty. If they were used properly on all occassions perhaps all that we would expect in the way of untoward incident would be an occasional reaction from an unusually sensitive person. Unfortunately insecticide hazards are not always confined to insects.

Conley, writing in the Journal of the American Medical Association, states on the basis of tabulations from a number of cities, that pesticides cause six to 10 per cent of the 100 to 150 deaths a year from accidental poisoning by this class of material (1). True, many of Table I. Insecticides Found on a Grocery Shelf

Allethrin
Chlordane
DDT
Dieldrin
Lethane
Molathion
Methoxychlor
Methylated naphthalenes
Nicotine sulfate
Piperonyl butoxide
Pyrethrins
Terpene perchlorinate

these cases cannot be attributed to household insecticides but for every fatality there is a large but unknown number of non-fatal accidents as well.

#### Insecticide Development

In the past 15 years a remarkable number of very effective insecticides have been developed to control the insects which attempt to challenge man's dominance of the earth. Each of these insecticides has gone through a long, difficult, and costly pathway before being placed on the commercial market. The chemical must first be synthesized. Then it is tested for its effect on certain test insects. If it shows any promise, toxicity tests on mammals and more extensive testing on insects and on plants, is next in order. Then come the more extensive field testing and more elaborate and lengthy toxicity studies. By the time this new insecticide becomes available commercially at least two years and as much as a million dollars may have been expended. Then, only after approval by the appropriate Federal Government agencies, can the product be marketed.

The rigorous path up which a new insecticide must go before it is allowed on the market has undoubtedly contributed to the comparatively low rate of injury from the newer insecticides. All these precautions have not eliminated all injury but they have done a remarkably good preventive job.

Insecticides used in the household are poisons. If they were not poisonous they would not kill insects. But there are many poisonous materials other than insecticides that are used daily without any particular thought and without any particular problem. If not used in the manner for which they are intended, insecticides as well as bleaching solution, kerosene, soldering paste, shoe polish and many other household items are capable of causing a rather violent reaction from the human organism.

The newer insecticides may be divided into two main categories, the chlorinated hydrocarbons and the organic phosphates. The chlorinated hydrocarbons appear in Table II. The most prominent

"With greater attention to labeling and packaging the hazard from household insecticides will be reduced even below its present low level."

\*Paper presented at the 44th annual midyear meeting, Chemical Specialties Manufacturers Association, Cincinnati, May 20, 1958.



Nobody likes the mosquito. It's banned in Boston... barred from Buffalo...kicked out of Kokomo. It's being routed from resorts...inched out of industry...condemned by cities.

It's enough to make Mr. and Mrs. Mosquito give up! But, no sir! Mosquitoes have been here for millions of years and intend to stay. That's why Lethane 384 is now used for adulticiding sprays, a new way with a recognized weapon to carry the fight to mosquitoes. The fog machines attack by land. Planes swoop down in aerial fogging raids. Down go the mosquitoes...down they stay! For that's the job of Lethane 384—quick knockdown and high kill.

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organic phosphates for household use are listed in Table III.

The chlorinated hydrocarbons have many similarities. They are soluble in fat and the common organic solvents but are insoluble in water. They are comparatively stable chemically and they act as convulsants in warm blooded animals. There is a wide range in the dose that is fatal to man but in the concentration used in most household preparations it is difficult to ingest enough of the active ingredient to cause a toxic reaction. More often than not the reaction reported is due to the vehicle rather than the insecticidal ingre-

The chlorinated hydrocarbons can cause the following symptoms generally in order of increasing dose:

- (a) a numbness or tingling sensation, particularly around the mouth;
- (b) tremors may develop around the eyelids and face and gradually spreading to the rest of the body;
- (c) there may be loss of appetite, nausea, and vomiting;
- (d) and, lastly, convulsions may result (3).

The chlorinated hydrocarbons may be taken into the body by mouth, via the nose, throat and lungs, and by passage through the intact skin. Among this group there is considerable variation in the dose required to cause an effect on humans but this difference in dosage to a great extent parallels the difference in concentration required to kill insects.

The organic phosphates may be absorbed by the body by all of the routes mentioned for the chlorinated hydrocarbons. The phosphates act by decreasing the concentration of an enzyme, cholinesterase. This enzyme is essential in the transmission of nerve impulses. Until the level of cholinesterase has dropped to 25 per cent or less of its normal value there will usually be no noticeable effect. When a critical level is reached a feeling of weakness may result with a head-

Table II

DDD Chlordane Lindane

(gamma isomer of benzene hexachloride)

Benzene hexachloride Dieldrin Heptachlor Methoxychlor

#### Table III

Malathion Diazinon Dipterex Chlorthion

Toxaphene

#### Table IV

Allethrin Rotenone Organic thiocyanates

#### Table V

Lead arsenate Sodium fluoride Boric acid Thallium compounds Phosphorus paste

ache followed by dizziness and nausea. If the cholinesterase level is sufficiently low the foregoing symptoms may be rapidly succeeded by cramps, vomiting, diarrhea and difficulty in breathing. Sweating is profuse and the victim becomes mentally confused. Coma, convulsions and death can follow in rapid succession if treatment is not begun immediately.

The picture painted can only result with gross misuse of the phosphates packaged for household use. The phosphates listed are among the least toxic of the phosphate insecticides and less toxic than some other presently used insecticides but they do have this potential for serious harm if misused.

In addition to these two major groupings of the newer insecticides we have a host of other organic materials available for household use. Some of these are listed in Table IV.

None of these materials are highly toxic but all can cause serious illness if taken in sufficient quantities. They may cause widely differing symptoms. Pyrethrins are known to be more offensive as skin and respiratory sensitizers than are the others in this group or any of the other available insecticides.

This by no means exhausts

the available household insecticides. The old standbys listed in Table V are still with us and cause many illnesses each year.

Ingestion of any of the materials listed can cause a rapid and often fatal illness. Sodium fluoride, in my experience, has been particularly insiduous because there may be a period of as long as six hours after ingestion during which the victim may feel perfectly well and act perfectly well. If treatment is not instituted during this period of apparent well being, treatment given later may be of no avail.

Often it is not the active ingredient that causes illness. There is no doubt that the kerosene solvent and the other carriers and fillers cause more of a problem than do the active ingredients in household insecticides. The allergies and sensitization reactions that occur are usually reactions to the vehicle, not to the insecticidal ingredient.

#### **Prevention of Poisoning**

Labeling: Insecticides packaged for home use and sold in interstate commerce come under Federal government regulations. They are generally well labeled or at least the label contains instructions needed to apply the material safely and an indication of first aid procedure in case of accidental human exposure. Labels on small packages are often burdened with so much information in such a small space that it requires a real effort to read the writing. I often wonder how much good such labeling actually does. On larger packages space does not pose the same problem but it does require considerable time and effort to read all the information presented. Some thought has been given to the development of easily recognized symbols for labeling and this would appear to be a step in the right direction. If symbols were developed to indicate materials that can be absorbed through the intact skin or by breathing, or colors that indicate a highly volatile material, labeling would be simplified. Such symbols would take their place in

(Turn to Page 102)

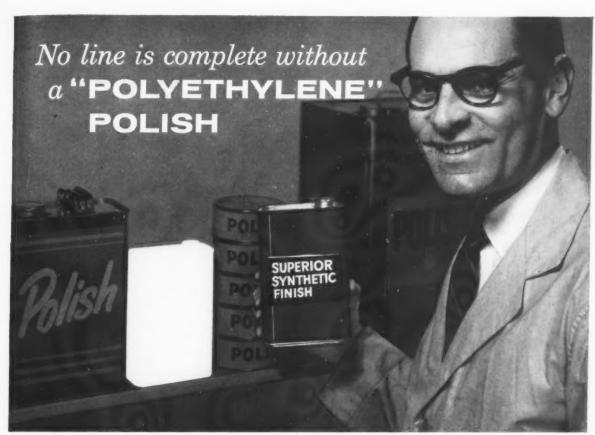
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# **Diethyltoluamide in Aerosol Repellents**

N - diethyl - toluamide, "the best all-purpose in-I sect repellent so far," according to the U.S. Department of Agriculture, has been in commercial production for a little over a year. This paper deals with the chemical, physical and repellent properties of diethyltoluamide and especially with its adaptability to

pressure packaging.

For many years the USDA Entomology Research Division in co-operation with the Dept. of the Army has conducted a screening program at its Orlando, Fla., station. The program is aimed at providing chemicals for the control or mitigation of attacks by insects and other arthropod pests of man. From the work at Orlando have resulted many of the insect control measures which helped to protect the Armed Forces from insect-borne diseases during World War II. Over 9,000 compounds have been screened as candidate insect repellents during the past 16 years, as part of the USDA program. Diethyltoluamide has emerged from this screening program. The commercial development of this new insect repellent has been undertaken by Hercules Powder Co. and others in the field. The product appeared on the consumer market for the first time in 1957 under a limited number of brand names in both lotion and aerosol form.

#### Characteristics

Diethyltoluamide can be manufactured in three isomeric forms. The meta isomer is a liquid at room temperature, while the ortho and para are solids. Usually the commercial material consists of from 85 to 95 per cent meta isomer

with the remainder either para or ortho. In order to be acceptable for use in aerosols as well as from the cosmetic standpoint, commercial diethyltoluamide should have approximately the following chemical and physical characteristics:

- 1. Virtually water white.
- 2. A characteristic mild odor, but completely free from impurities causing off odors.
- 3. Moisture content of less than 0.5%.
- 4. Acid No., less than 0.15.
- 5. Refractive index, approximately 1.52.
- 6. Specific gravity at 25/25°C. approx.

More will be said later about the relationships between these chemical and physical properties and their relation to packaging commercial aerosols.

#### **Isomer Content**

As mentioned before, there are three isomers of diethyltoluamide. Of the three, when tested against biting pests, pure meta is more effective than pure ortho or pure para. The ortho isomer appears to be somewhat more effective than para, but it tends to be removed more easily from the skin by wiping action. All three isomers, then, are insect repellents with meta being the most outstanding. It should be noted, however, that USDA has found diethyltoluamide containing 70 per cent meta isomer to be just as effective as diethyltoluamide with a 95 per cent meta content, provided the remainder of the material was composed entirely of either or both of the other two isomers.

Most manufacturers offer both an 85 per cent and a 95 per cent meta product. The 85 per cent material, however, has accounted for most of the market because it is less expensive and has been shown to be just as effective as the higher meta content compound.

Government specifications for diethyltoluamide, soon to be released, will call for a minimum content of 85 per cent meta isomer.

#### **Cosmetic Qualities**

Diethyltoluamide, even at full strength, forms an even nonoily layer on the surface of the skin which dries to an invisible film within minutes. When applied in an alcoholic lotion or from an aerosol formulation containing alcohol, the initial film is scarcely noticeable and dries immediately, vet will repel insects for hours. This is in contrast to earlier repellents which left an oily or greasy sensation on the skin when present in effective quantities. This pleasing lack of oiliness combined with the agreeable mild odor of diethyltoluamide renders it quite acceptable from a cosmetic standpoint.

#### Toxicity

Laboratory studies on diethyltoluamide revealed toxicity comparable to that of older repellents, such as dimethylphthalate, ethylhexanediol, and "Indalone." (Fairfield Chemical Division, Food Machinery & Chemical Corp.) This has been confirmed by acute and subacute oral and dermal toxicity studies in several species of animals.3 In addition acute and subacute studies on the three individual isomers of diethyltoluamide have shown only slight inconsequential differences, with the ortho being the most toxic, followed by the meta and para isomers.4 Patch testing of human subjects with solutions of 70 per cent meta and 30 per cent para isomer diethyltoluamide revealed no evidence of irritation or sensitization when applied to normal or abraded skin; nor did it delay the healing time

<sup>\*</sup> Presented at the 44th midyear meeting of the Chemical Specialties Manufacturers Association, Cincinnati, May 20, 1958.

#### By H. F. Pierce\*

Hercules Powder Co. Wilmington, Del.

of abraded skin.3 However, like all of the earlier repellents, diethyltoluamide is irritating to the eyes if it contacts them directly.

The favorable results of these controlled experiments and the conspicuous absence of complaints following the widespread consumer use of 85 per cent meta-15 per cent para-diethyltoluamide last summer, argue well for its continued safe use on human skin.

#### Plasticizing Action

Insect repellents available today exhibit a tendency to solvencv or plasticizing action. Diethyltoluamide is no exception and will soften many finishes if spilled upon them. Since diethyltoluamide is usually applied in alcoholic solution rather than in 100 per cent concontration, it forms a thin dry film on the skin which has very little effect on finishes. It does not affect nylon, "Dacron," or natural fabrics. However, it should not be applied directly to rayon or acetate clothing. After widespread usage by the public last year, plasticizing action was not considered to be a sales drawback.

#### **Formulations**

Diethyltoluamide has been formulated into simple alcoholic lotions, aerosols, and sticks. Diethyltoluamide appears to be compatible in emulsion type formulas, as well as in combination sun screen-repellent products. Liquid formulations have been packaged in glass bottles; however, it is anticipated that polyethylene squeeze bottles will also be employed for packaging in the future. These containers have the advantage of unbreakability around patios, swimming pools, and in fishing tackle boxes.

We believe that during last year, the first season of commercial marketing of diethyltoluamide, aerosols about held their own with lotions in sales appeal. In addition to the growing public acceptance of pressurized packages, there is an excellent reason for the acceptance of diethyltoluamide packaged in this manner. It is found in the ease of treating clothing with aerosols, and the ability to apply the right amount without wasting or spilling any. In areas where mosquito populations are heavy, it is not enough to treat only the exposed skin with a repellent, for the pests will bite through thin shirts and trousers, particularly where the clothing is stretched rather tightly against the body. It is a simple matter to spray clothing with diethyltoluamide aerosols either before or after dressing. The protection obtained will last for days or weeks, provided the clothing is not washed. In order to prevent attacks from ticks or chiggers, the camper or sportsman need only direct the aerosol spray on his boots, stockings, pants cuffs, and other openings in his clothing. Again the excellent repellency obtained will persist for long periods of time. No detailed directions need be given on the labels. The user simply sprays the proper parts of his clothing sufficiently to cause wetting. Although pressurized packages are quite suitable for skin treatment, we believe that clothing treatment in particular will popularize diethyltoluamide aerosols.

#### **Aerosol Packaging**

When I speak of aerosol packages I am not referring to a true aerosol but rather to a pressurized package which will produce a wet spray adaptable to satisfactory treatment of skin as well as clothing. The consumer aerosol package has been standardized on a 15 per cent by weight diethyltoluamide content. To aid spreading, especially on skin, it is suggested that at least an equal amount of denatured absolute ethanol be added to the formulation, Some formu-

lators may desire to add even more alcohol. A mildly denatured ethanol is preferable to isopropanol for olfactory reasons. Apparently, a large percentage of the public objects to the odor of isopropanol, and its odor is difficult to mask or perfume. As mentioned above, diethyltoluamide has a mild, pleasant characteristic odor, which some formulators do not wish to mask or perfume. If a perfumed aerosol is desired, several fragrances are available from various perfume houses who have worked with diethyltoluamide aerosol formulations. The USDA workers have not demonstrated that perfume decreases the effectiveness of any insect repellent, including diethyltoluamide. The remainder of the formulation consists of propellant.

Propellant 12 and combinations of 11 and 12 have been used in diethyltoluamide aerosol formulations. Straight propellant 12 is employed most frequently and will probably be specified in U. S. Government specifications. Methyl chloride is undesirable because of its tendency to release hydrochloric acid. Acid formation should be avoided lest corrosion difficulties be encountered inside the aerosol container. The acid number of the commercial diethyltoluamide itself should be kept below 0.15.

While a low moisture content is also desirable, our experience, as well as that of the USDA, indicates that the acid number is even more important from a corrosion standpoint than is moisture content. Since diethyltoluamide is somewhat hygroscopic, an effort should be made by the formulator not to allow the material to be exposed to the air for long periods. One pound tin plated steel is believed to be superior to the lighter tin coatings or to other synthetic coatings insofar as corrosion inhibition is concerned. Commercial aerosol formulations of diethyltoluamide sold during the past season were packaged in one-pound tin plated containers and gave quite satisfactory shelf life. Further testing may demonstrate lighter tin

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Cardis Polymer #8	205-210	1-2	3-5	7-10	24-28	Polymer
Cardis One†	195-200	1-2	4-5	12-16	55-65	Emulsifiable Petroleum Wax
Cardis 314®	184-189	4-6	4-5	13-16	45-55	Emulsifiable Petroleum Wax
Cardis 319®	180-185	5-7	4-6	18-20	65-70	Emulsifiable Petroleum Wax
Cardis 320®	180-185	5-7	4-5	28-30	75-80	Emulsifiable Petroleum Wax
Cardis 262®	195-200	3-5	Brown	14-17	40-45	Specially Processed Petroleum Wax
Polymekon*	195 MIN.	0-3	Yellow	0-0	0-0	Specially Processed Petroleum Wax
Fortex®	190-200	3-5	21/2-31/2	0-0	0-0	Microcrystalline Hard & Plastic
Mekon® B-20	190-195	3-5	Brown-Black	0-0	0-0	Microcrystalline Hard & Brittle
Mekon® A-20	190-195	3-5	Amber-6 Max.	0-0	0-0	Microcrystalline Hard & Brittle
Mekon® Y-20	190-195	3-5	Yellow-3-31/2	0-0	0-0	Microcrystalline Hard & Brittle
Warco® Wax #5	158-160	9-10	Ivory	-	-	Specially Processed Petroleum Wax
Warco® Wax 180 White	180-185	4-7	White	0-0	0-0	Microcrystalline Hard & Brittle
Warco® Wax 180 Brown	180-185	4-7	Brown	0-0	0-0	Microcrystalline Hard & Brittle
Warco® Wax 170-A Yellow	170-175	10-15	Yellow 1-2	0-0	0-0	Microcrystalline Plastic
Warco® Wax 170-A Brown	170-175	10-15	Brown	0-0	0-0	Microcrystalline Plastic
Warco® Wax 150-A Yellow	145-155	15-20	Yellow 1-2	0-0	0-0	Microcrystalline Plastic
Warco® Wax 150-A Brown	145-155	15-20	Brown	0-0	0-0	Microcrystalline Plastic
Warcosine®	150-155	15-20	White	0-0	0-0	Microcrystalline Plastic
Paraffin	136-138	FULLY R	EFINED			Crystalline
Cane Wax 500	171-176	3 Max.	Light Brown	25-35	55-70	Vegetable Wax
Cane Wax 517-711	171-173	2 Max.	Black	-	-	Vegetable Wax
Cane Wax 700	169-174	1.0-1.5	Light Brown	25-30	70-90	Vegetable Wax

<sup>†</sup> Pat. No. 2,471,102



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<sup>\*</sup> Patent Applied For.

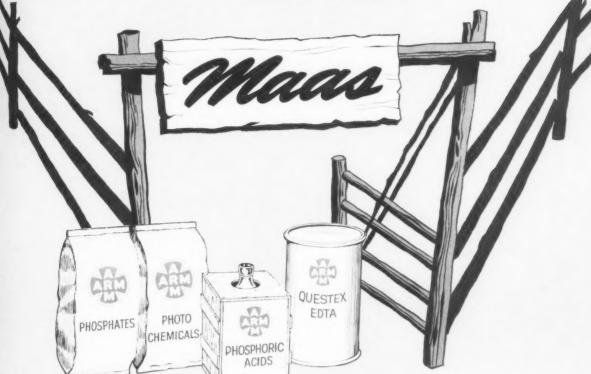




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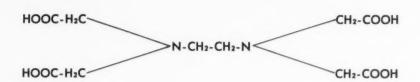


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	ANNIBROUS	4H2U CRTSIAL	ANNTDROUS	2H <sub>2</sub> O CRYSTAL
Molecular Weight	292.25	452.25	380.20	372.20
Typical Assay	99.5%	100.3%	96.5%	100.0%
EDTA 4H Equivalent	99.5%	64.8%	74.2%	78.5%
Practical Solubility 25°C to 90°C — grams per 100g added H₂O	0.1-0.4 g.	51-63.5 g.	44·54 g.	6-20 g.
Milligrams CaCo <sub>3</sub> chelated per gram at pH 8.	340 mg.	220 mg.	255 mg.	270 mg.
Quantity to chelate one pound CaCo <sub>3</sub>	2.94 lb.	4.55 lb.	3.92 lb.	3.73 lb.

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coatings or other linings to be acceptable; however, for the present, one-pound tin plate is recommended.

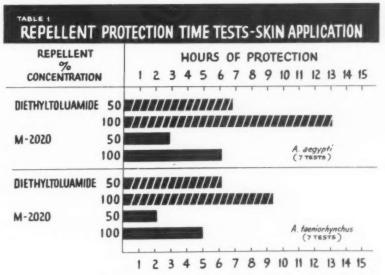
Repellency Tests

So far we have discussed the physical, chemical, and toxicological properties of diethyltoluamide, as well as its uses in commercial products. We have also talked about its adaptability to aerosols and some of the considerations to be observed in packaging pressurized formulations.

Before we finish I would like to point out, by means of the following tables, some of the outstanding insect repellency to be expected with diethyltoluamide. All of the following data were obtained by USDA workers using a 70 per cent meta isomer product. The data, upon which all but one of the following slides were based, were obtained from the paper "New Insect Repellent" by Gilbert et al.1 This paper explained the test methods in detail so that only a brief mention of the procedure will be included here.

Although other repellents were included in these tests, we will show only the comparison of diethyltoluamide with the standard military skin repellent M-2020 (40 per cent dimethyl phthalate, 30 per cent dimethyl carbate, and 30 per cent ethylhexanediol) and the standard military clothing repellent M-1960 (30 per cent Nbutylacetanilide, 30 per cent 2butyl-2-ethyl-1, 3-propanediol, 30 per cent benzyl benzoate, and 10 per cent "Tween 80"). In the following skin tests, one ml. of repellent was spread evenly over the forearm and compared with a like amount of the other repellent on the other arm.

Diethyltoluamide was compared with M-2020 in a laboratory test in which each arm was exposed to caged mosquitoes and stable flies for a three-minute period at roughly half hour intervals. The times shown signify "complete protection," the time between application and the first "confirmed bite"



(a bite followed by another within 30 minutes). It can be seen from Table 1 that a 50 per cent diethyltoluamide alcoholic solution offers somewhat better protection than full strength M-2020 whereas 100 per cent diethyl toluamide offers about twice the protection of 100 per cent M-2020 and about four times the repellency of 50 per cent M-2020 against both species.

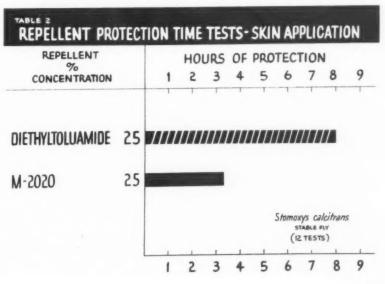
25 per cent solutions of diethyltoluamide and M-2020 were compared also against *Stomoxys* calcitrans (stable fly). Protection times for diethyltoluamide were almost 2.5 times longer than for M-2020 as shown in Table 2.

Table 3 shows results of pro-

tection time tests against Aedes aegypti in which diethyltoluamide was compared with M-2020, 50 per cent diethyltoluamide was slightly more effective than 100 per cent M-2020 under normal conditions and even more superior under sweating conditions. In the latter case 50 per cent diethyltoluamide gave protection for 2.3 hours while 100 per cent M-2020 persisted for only 1.8 hours.

#### Rinse Resistance

One of the real advantages offered by diethyltoluamide is protection continued even after rinsing with water. This property is of interest to sportsmen, particu-





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larly fishermen, who often have cause to immerse their hands and arms in water. This property is also of great value to military personnel who may be subjected to rain as well as to the necessity of fording streams and crossing swamps in mosquito infested areas.

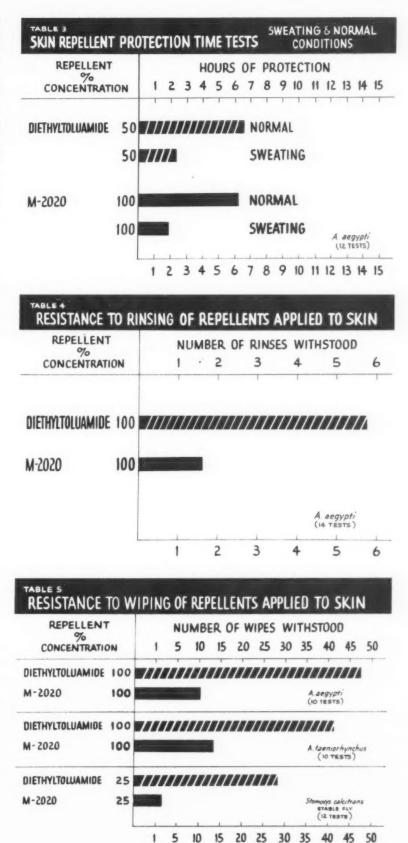
Table 4 compares diethyltoluamide with M-2020 in a rinsing test against Aedes, aegypti. An average of 14 tests shows diethyltoluamide to have withstood almost six water rinses while M-2020 was rendered ineffective in less than two rinsings.

#### Wipe Resistance

Another highly desirable characteristic of an insect repellent is resistance to rubbing or wiping action. Persons using repellents on their skin are constantly, unconsciously wiping the treated areas against their clothing or other objects. This tends to remove the repellent and render it ineffective. As an example of such removal, it can be observed that an arm to which a repellent has been applied, will usually be attacked first, on the inner surface which has been rubbing against clothing. Most of the carlier repellents have not stood up well under conditions of rubbing or wiping. The Orlando workers have devised a test in which the subject's arms are wiped by tissue after the repellent has been applied. The procedure consists of wiping the subject's arms and exposing them to caged mosquitoes, and repeating the procedure until the repellent breaks.

Table 5 shows data from tests comparing 100 per cent diethyltoluamide with 100 per cent M-2020 against Aedes aegypti and Aedes taeniorynchus, and 25 per cent alcoholic solutions of both repellents against Stomoxys calcitrans (stable fly).

Against Aedes aegypti, diethyltoluamide withstood 47.6 wipes or about 9 times as many as M-2020; against Aedes taeniorynchus, 41.4 wipes or about 3 times as many as M-2020; and against the stable fly diethyltoluamide



withstood 28.7 wipes or more than 20 times as many as M-2020.

#### **Clothing Treatments**

Field tests<sup>2</sup> against Amblyomma americanum, the lone star tick, were conducted in Georgia. In these tests repellents were applied to two-piece cotton fatigue uniforms, and subjects wearing the treated uniforms were exposed in tick-infested areas for 1 to 2 hours. At the end of the exposure period the uniforms were removed and a count made of the ticks on the clothing and body. In between tests, which were conducted about once a week, the uniforms were aged on hangers in a ventilated shed.

Table 6 shows that diethyltoluamide gave about the same protection as the standard military clothing repellent M-1960 for the first three weeks but was somewhat less effective at the end of a 4 to 5 week period.

Diethyltoluamide was compared in the laboratory with the standard military clothing treatment M-1960 against Aedes aegypti and Trombicula splendens (chiggers). Against the first pest both materials were applied in acetone solutions to cotton stockings which were worn on the subject's arms and were exposed to caged mosquitoes for one minute at various intervals until 10 bites were re-

TABLE 6			
CLOTHING	TREATMENT-	AGING	TESTS

REPELLENT DOSAGE GRAMS/SQ. FT.		AVE. PERCENT 1-3 WEEKS	REPELLENCY AFTER AGING 4-5 WEEKS		
DIETHYLTOLUAMIDE	2	90	80		
M-1960	3.6	95	95		

ceived through the fabric during a single exposure. Against chiggers, treated cotton patches were confined between a rubber ring and two glass plates. Five chiggers were placed on the cloth, and the materials were considered effective if the chiggers were immobilized within 15 minutes. In between tests, the stockings and cotton patches were hung in a well aired room.

Table 7 shows that diethyltoluamide remained effective against *Aedes aegypti* for 58.3 days vs. 19.0 days for M-1960. Against chiggers, diethyltoluamide's effectiveness persisted for 46 days or twice as long as M-1960.

#### Summarv

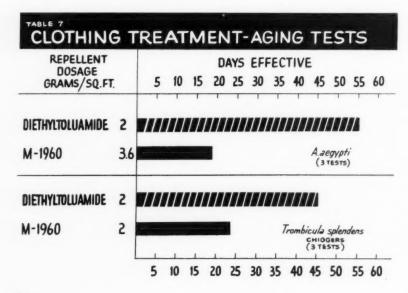
Diethyltoluamide, an extremely effective, wide-range insect repellent, developed by the USDA, has been sold in the consumer market during the summer of 1957. It appeared as both a lotion and as an aerosol or pressurized package. The aerosol formulation is particularly useful in treating clothing for protection against biting insects, chiggers, and ticks.

Commercially available diethyltoluamide is a virtually odorless, water white liquid. Its toxicity is in the range of earlier skin repellents. A mixture of meta and para isomers of diethyltoluamide was tested on human skin and found to be nonirritating to either whole or abraded skin, nor did it delay the healing time of the abraded skin. The mixture was not sensitizing to human skin.

The pure meta isomer of diethyltoluamide has been found to be more effective than either the pure ortho or para alone; however, USDA workers have found no differences in insect repellency between 95% meta diethyltoluamide and isomer combinations containing at least 70 per cent meta isomer.

Diethyltoluamide aerosols have been packaged in one-pound tin plate containers. Corrosion problems can be avoided if the acid number of the diethyltoluamide is low. Moisture is not believed to be as important in this respect, but since diethyltoluamide is hygroscopic, it should not be exposed needlessly to air for prolonged periods. Denatured absolute ethanol is useful as a spreading agent in diethyltoluamide aerosols. Propellant 12 and mixtures of propellants 11 and 12 have been used

(Turn to Page 191)



#### **CSMA** Meeting

(From Page 72)

mechanism are described. Composition, physical and environmental factors affecting this process are discussed and their effect on the final film properties is illustrated.

The development, for the first time, of a nonionic system which overcomes previous objections to the use of emulsifiers based on this class of surfactant for selfpolishing floor finishes was described in a paper by Kurt J. Wasserman of Wax & Rosin Products Co., New York. In the paper, "Nonionic Self-Polishing Wax Emulsions", the author tells of a newly developed emulsifier, which when combined with a wax, forms the basis for a dry-bright emulsion which possesses "excellent" leveling properties and accordingly does not require the use of alkali soluble resins. The basic system is then combined with polymer dispersions, such as polyvinyl acetate, to form floor finishes which possess a high degree of gloss, water resistance, stability, and anti-slip features at "low raw material cost." Such a system can be made as a 40 per cent solids-fluid self-polishing floor wax concentrate, said the author.

The group luncheon, presided over by James E. Ferris of Hooker Chemical Corp., Niagara Falls, CSMA president, heard an address by N. B. Tucker, director, research division, Procter & Gamble Co., Cincinnati, entitled, "Budgeting for Research." Mr. Tucker's address begins on page 43 of this issue.

#### **Aerosol Division**

NEARLY 400 million aerosols were filled in the United States and Canada in 1957. This is a gain from the 1956 output of 320,000,000 units, the Aerosol Division was told at its meeting, May 20. Both figures are projections of the Aerosol Survey Committee, of which Frederick G. Lodes, Lodes Aerosol Consultants, Inc., New York, is chairman. Actual figures reported by fillers for



Comparing notes just prior to an Aerosol Division committee meeting were, left to right, Richard J. Krauss, John C. Stalfort & Sons, Inc., William T. Egan, Colgate-Palmolive Co., W. Earl Graham, Clayton Corp., and Don J. Templeton, Stanley Home Products, Inc. Shirt-sleeves session of the Insecticide Survey Committee finds, gathered around the table clockwise, George W. Fiero, Esso Standard Oil Co., Joseph E. Lee. McLaughlin Gormley King Co., Alfred Weed, Olin Mathieson Chemical Corp.; A. E. Badertscher, McCormick & Co.; John A. Rodda, Fairfield Chemical Division, Food Machinery & Chemical Corp., and T. B. Welsh, Gulf Oil Corporation.

1957 and '56, respectively, were 339,490,802 and 293,190,453 units. The estimated totals of 390 million units, worth \$390 million, in 1957, and 329 million units, valued at \$320 retail, in 1956, were arrived at by taking into consideration can and valve sales for each year. Last year 361,743,798 aerosol cans and 422,812,332 valves were reported sold.

Participation on the part of aerosol fillers was up, too, for the '57 census: 92, as against 83 in 1956.

Three new product categories are included in the 1957 figures: "Glass Cleaners", "Shoe and Leather Dressings" and "Sun Tan Preparations". The first two were included in "Other Household Products" in 1956, and sun tan preparations were part of "Personal Products" in the earlier survey.

Some changes in the '57 standings are noted. While hair sprays are still No. 1, with a reported total for '57 of 94,431,957, against 79,640,927 a year ago, shave lather moved from third to second

place, displacing insecticides, which appear to be suffering from "bad bug years". The shave lather total in '57 was 50,868,287, up from 42,-068,498 reported in the previous survey. Also overtaking insecticides, which plummeted to fourth place in the standings, were room deodorants, with a reported total of 41,-988,888, up from 35,311,647 and fourth place in '56. Rounding out the top five are paints ("pigmented and metallic sprays") with a reported total of 30,525,954, which represents a nice gain over the '56 figure of 19,584,468.

Also worth noting is the glass cleaners' total of 11,227,625, shown separately for the first time in this survey. Colognes and perfumes went ahead nicely in '57 to 17,881,128, more then doubling the '56 figure of 8,768,927.

W. Earl Graham of Clayton Corp., St. Louis, in his address as chairman of the administrative committee of the Aerosol Division, cautioned aerosol loaders not to "be discouraged if the entire (food) in-

# Resistant Insects

# For Dependable Control Without Toxic Hazards Put Pyrenone\* In Your Product

Today "resistant" insects are the rule, not the exception.

Interbreeding among resistant strains and wide distribution of these hard-to-kill insects throughout the country via common carriers—have created new problems for the formulator.

That's why you will be well advised to insist upon Pyrenone concentrates for your formulations. They are exclusive combinations of always dependable *piperonyl butoxide* and *pyrethrins*.

Pyrenone is not only highly effective against resistant strains of flies, roaches and

other common pests, but it's so much safer to use in sensitive food areas.

Toxicity to human beings is so low that higher dosages of Pyrenone sprays (sufficient to control the hardiest insects) are permissible for use in homes and hotels... in restaurants and hospitals... in dairies, food processing plants and other industrial establishments.

For faster knockdown . . . higher kill . . . and greater all-round safety, put Pyrenone in your product. Contact the nearest office of Fairfield Chemical Division. Branches in principal cities. In Canada: Natural Products Corporation, Toronto and Montreal.

\*REG. U.S. PAT. OFF., F.M.C.

# Pyrenone

Putting Ideas to Work



#### CSMA Survey of Non-food Aerosol and Pressurized Products Filled by 92 Manufacturers in 1957 and 83 in 1956 (1956 figures appear directly below those for 1957)

Number of Units Filled

		C1		Metal Co	ntainers		
		Glass	Metal Containers				
9 40		Containers All	16-ounce But	12-ounce But	6-ounce And		
Prod	uct	Sizes	Over 12	Over 6	Less	Total	
	Sprays						
1.	Spray Insecticides	***	3,088,153	20,698,639	2,094,887	25,881,679	
0	Residual Insecticides (such as	***	1,920,670	29,403;861	3,624,256	34,948,787	
2.	roach and ant sprays, etc., in-						
	cluding insect repellents	***	1,154,589	3,713,756	2,972,269	7,840,614	
		***	828,504	7,787,224	293,530	8,909,258	
3.	Residual Insecticides — Plants		657,642	1,105,130	183,027	1,945,799	
	(household and gardens)	***	375,836	1,156,178	145,330	1,677,344	
4.	Mothproofers (including all fab-		0,0,000	1,100,110	140,000	2,017,02	
	ric pests)	***	1,835,247	3,995,300	109,227	5,939,774	
		***	1,511,188	5,049,578	150,175	6,710,94	
Coatin			15,089,859	12,101,791	3,334,304	30,525,954	
5.	Pigmented and Metallic Paints	***	6,621,482	11,839,944	1,123,042	19,584,468	
6.	Clear Plastic Sprays		2,615,334	1,547,575	1,839,001	6,001,910	
-		***	1,422,217	1,378,332	172,401	2,972,950	
	hold Products	,	1 055 000	10.001.004	00.000.104	41 000 000	
7.	Room Deodorants	†	1,055,020 236,414	10,361, <b>674</b> 11,015,034	30,572,194 24,060,199	41,988,888	
Q	Fire Extinguishers	T	2,219,226	172,606	24,000,133	2,391,83	
0.	rie Exiliquishers		1,855,571	989,499	+	2,845,070	
9.	Snow (all types)	***	2,047,839	2,215,886	486,171	4,749,896	
		***	1,768,519	4,143,709	498,003	6,410,231	
10.	Glass Cleaners	†	10,961,242	266,383	†	11,227,625	
11.	Shoe or Leather Dressings	**********	517,780	917,668	956 Survey	4,273,100	
12.	Other Household Products	**********	Not Sho	wn Separately in 19	956 Survey		
	(cleaners of all types such as metal, oven, rug and uphol- stery; waxes, water repellents,						
	etc.)	+	735,144	3,134,415	1,635,744	5,505,300	
		1,491,904	8,599,417	4,515,238	8,476,124	23,082,683	
	nal Products			0.000.000	41 400 070	50,868,287	
13.	Shaving Lather	***	†	9,399,209 10,735,586	41,469,078 31,332,912	42,068,498	
14	Hair Sprays	1,406,729	12,060,459	28,850,599	52,114,170	94,431,957	
1.4.	nun oprays	5,097,320	5,639,895	21,816,463	47,087,249	79,640,927	
15.	Medicinals and Pharmaceuti- cals (such as fungicides, burn treatments, topical antiseptics,						
	anesthetics, antibiotics, etc.)	967,673		347,610	4,483,786	5,799,069	
	districted, differences, ore.,	723,195	†	318,516	1,233,464	2,275,175	
16.	Colognes and Perfumes	17,724,553	***	+	156,575	17,881,120 8,768,92	
10		7,024,163	***	250,000	1,494,764	618.445	
17.	Sun Tan Preparations	***	Not Lis	ted Separately in 15	956 Survey		
18.	Other Personal Products (such as shampoos, personal deodor-						
	ants, hand lotions, powders, depilatories, etc.)	1,180,487 756,412	†	1,625,970 1,844,271	3,177,205 5,028,518	5,983,662 7,629,20	
Misce	llaneous	100,412	***	a tor, a store a			
	Miscellaneous Products (such as pet, mildew, automotive and						
	industrial sprays, lubricants and any others)	***	5,235,558	8,143,429	2,256,893	15,535,880	
		-	FO 070 000	100 507 640	150.340.628	336,490,802	
	1957 TOTALS 1956 TOTALS	21,279,442 15,092,994	59,273,092 32,776,949	108,597,640 118,258,238	127,062,272	293,190,45	

†Tco revealing to be released.

dustry does convert" immediately to pressure packaging. He said he "will be satisfied if only a few percent" switch to this form of packaging. Mr. Graham predicted that in 1958 500 million aerosol units will be produced. He further predicted that pressure packaging production will reach the billion unit mark sometime in the 60's and that by 1965 one billion food aerosols a year will be made.

Mr. Graham also asked for the support of all those interested in

# EPOLENE "E"



Epolene POLYETHYLENE WAXES

# Waxes Bright When Others Wane

It's no mere play on words. Tests show that the gloss of Epolene based floor polishes actually increases with wear. On asphalt tile, for instance, the gloss of a typical Epolene polish rated 50% immediately after application — an excellent rating for any floor polish. Following a normal period of wear and rebuffing, however, its gloss had increased to 65%.

Readily emulsifiable, Epolene "E" is supplied in small, rice size pellets — convenient to handle and easy to process. When it is incorporated into polishes it provides excellent durability, slip resistance and resistance to water spotting. Non-discoloring, Epolene "E" also imparts an unusual and lasting depth of color to floor surfaces.

To assure the superior performance of its polyethylene waxes, Eastman maintains a precise and rigid system of controls throughout the manufacturing process. Polish manufacturers can thus standardize on formulations and procedures with complete confidence in batch to batch uniformity.

To help manufacturers in taking full advantage of the outstanding properties of Epolene "E", Eastman maintains an extensive technical service laboratory in Kingsport, Tenn. Through this laboratory polish manufacturers are offered expert assistance in formulations and manufacturing techniques.

For samples and further information, write Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, Chemicals Division, Kingsport, Tennessee.

\*With a 60° Gardner Glossmeter

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Massachusetts; Cincinnati; Cleveland; Chicago; Houston; St. Louis. West Coast: Wilson Meyer Co., San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.



#### CHLORDANE 1958 "SALES-BUILDER" PROGRAM

FOR DEALERS: SALESMEN'S INSECT CONTROL REFRESHER COURSE . MONTHLY INSECT CONTROL INFORMATION SERVICE . "SHOW AND SELL" SALES INCENTIVE CONTEST • FREE ADVERTISING SUPPORT IN LOCAL AREAS • ADVANCE COPIES OF CHLORDANE SALES PROMOTION MATERIAL . CONSUMER REFERENCE LIST OF CHLORDANE SOURCES OF SUPPLY . THE VELSICOL AWARD FOR OUTSTANDING MERCHANDISING

FOR DISTRIBUTORS: DEALER SUPPORT PROGRAM . CONTEST PRIZES . SPECIAL CASH BONUSES



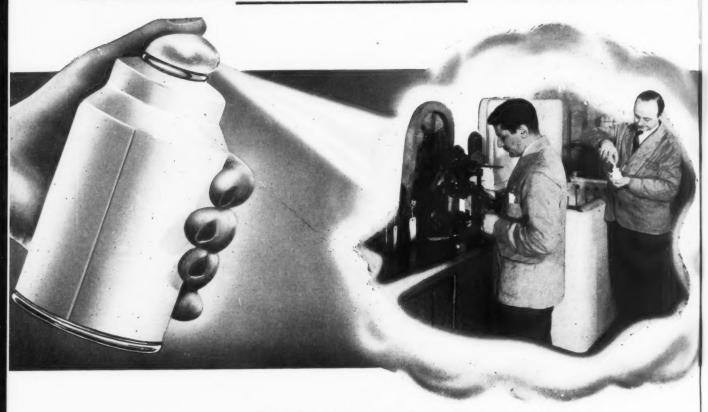
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	330 East	Grand	Av	e., Cl	nicago 11, 1	101.
Send me complete Builder" Program.	information	about	the	1958	Chlordane	"Sales
Name						

Address\_ Company

### Give your aerosol product the advantage of a GIVAUDAN CUSTOM-MADE FRAGRANCE



The problems of compatibility, corrosion, solubility and fixation are especially complex in connection with odor selection for aerosols. Further, the choice of propellants and other ingredients, and the type of container all affect the performance of an aerosol fragrance, so that its selection becomes properly a matter for experts.

Such experts are ready to serve you at Givaudan's special Aerosol Research Laboratory. Our staff will welcome the opportunity to recommend, adapt, or "custom-make" a fragrance for your aerosol product which will give distinctive sales appeal and the utmost satisfaction under the particular conditions governing its formulation and use. We invite your inquiries,



Better perfume materials through

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321 West 44th Street . New York 36, N. Y.

aerosols in the CSMA's aerosol publicity and promotion program. In addition he called attention to the fact that on January first of next year the first state law regulating aerosols goes into effect in Connecticut.

A review of the highlights of the first year's operation of the Aerosol Publicity Committee's Aerosol Market Development and Publicity program was outlined by Norman Odell of G. M. Basford Co., New York, Mr. Odell was introduced by Frederick J. Lodes, chairman of the Aerosol Division's Publicity Committee, who pointed out that 54 companies had indicated they would contribute to the 1958 fund. This is 15 more than participated a year ago. A new steering committee will be elected by the committee, Mr. Lodes reported.

Three major effects of the Aerosol Division's publicity effort cited by Mr. Odell were full length feature articles in the June issues of Coronet and American Home magazines. The Coronet article carried the title, "Industry's Spectacular Squirt", while American Home's was called, "Block Those Bugs". In addition, Mr. Odell reported that the March issue of Beauty Fashion magazine was a special issue devoted to the use of aerosols in good grooming. The committee supplied much of the information for this article.

Other "successes" of the publicity program cited by Mr. Odell include: 20 confirmed TV showings of the program's film, "The Magic Button", by channels having an estimated 3,000,000 viewers; an aerosol mothproofing article distributed in February to 1500 newspapers in 22 states, a newspaper editorial, "Presto", sent to 900 syndicated newspapers in 48 states. The editorial appeared in newspapers in 28 states.

Future plans include the making of two more films, tie-ins on two or more television shows; a press party at the CSMA meeting in December for editors, and a monthly bulletin to all Aerosol Division members featuring some major publicity feat.

#### CSMA Survey of Automobile Cooling System Chemicals Production (Exlusive of Antifreeze)

#### Comparison of 1957 and 1956

1—Treatment Package (Consumer-size) Number of Individual Consumer Size Packages

	1957	1956	
A. Cooling System Cleaners			
Dry-form, two phase type (cleaner and neutralizer)     Dry form, one phase     Liquid form	1,399,163 441,485 2,203,305	1,840,171 469,864 2,368,989	
Total	4,043,953	4,679,024	
B. Cooling System Sealers			
Liquid form, except block sealers     Dry form, except block sealers     Heavy Duty and block sealers	9,390,758 998,761 1,292,640	8,894,377 1,080,055 1,217,892	
Total	11,683,159	11,192,324	
C. Cooling System Inhibitors			
1. Dry form	+	580,211	
2. Liquid form	464,109	1,136,793	
D. Combination Water Pump			
Lubricant and Rust Inhibitor	7,365,665	6,600,532	
E. Others	+	+	
†Too revealing to be released.			

An article on aerosols has and the editorial board of the magabeen submitted to Reader's Digest zine has asked for further facts, Mr.

Odell reported.

A paper on "The Use or Diethyl Toluamide Insect Repellent in Acrosols" by Harry F. Pierce of Hercules Powder Co., Wilmington, Del., was the next feature of the session. It appears in full beginning on page 80 of this issue of SOAP & CHEMICAL SPECIAL-TIES.

Data on the results of toxicological studies of aerosol hair sprays containing 1,1,1 inhibited trichloroethane ("Chlorothene") were presented in a paper, "The Role of 'Chlorothene' in Personal

Product Aerosols", by Arthur E. Schober of Dow Chemical Co. He said that the material, which is used as a vapor pressure depressant and solvent in aerosols, may be used safely in hair sprays in concentrations up to 26 percent of the total formulation. According to Mr. Schober, "its use in hair sprays as a vapor depressant provides a quality formulation at reduced cost or a non-flammable formulation at approximately the same cost." In addition, the speaker claimed, "weight loss due to valve leakage and can corrosion due to hydrolysis are comparable to present formulations utilizing propellant 11 as the sole vapor pressure depressant."

(Turn to Page 133)

#### Comparison of 1957, 1956, 1955 CSMA Brake Fluid Surveys (showing fluid actually compounded)

		1957 Number of Gallons	1957 Percen- tage	1956 Number of Gallons	1956 Percen- tage	1955 Number of Gallons	1955 Percen- tage
1.	SAE Former 7OR2 7OR1	2,167,335 7,028,637	20.82 67.51	2,398,994 5,310,772	24.9 55.5	2,845,014 5,681,525	26.8 53.4
2.	Govt. Spec.	55,127	0.53	255,162	2.6	321,392	3.0
3.	Non-Spec.	1,160,687	11.14	1,625,306	17.0	1,776,688	16.8
	Total	10,411,786	100.00	9,590,234	100.0	10,624,619	100.0

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The men shown here are just part of the Bareco laboratory staff that works round-the-clock to bring to you and other wax users all the latest improvements in the quality and production of modern microcrystalline waxes.

Your wax problem becomes their problem—whether it be a matter of supply, blending, special product characteristics, or price—by simply asking for their help. This technical service is always available to you—even to the development of an entirely new wax to meet your special needs.

So, if you have a wax problem, discuss it with Bareco. There's never any cost or obligation... and we're confident that our years of specialized experience can be helpful to you.

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Helpful product information, technical data, yours on request.



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Full text of Florida Supreme Court's ruling upholding lower court's verdict against Tampa Drug Co. and awarding \$160,000 damages in

## Carbon Tet. Poisoning Case

THE Supreme Court of Florida on May 7 affirmed a verdict of \$160,000 against the Tampa Drug Co. for damages for wrongful death which resulted from the use of carbon tetrachloride. This is an important product liability decision. The action was based upon the inadequacy of the warning statements on the label. Commenting that the manufacturer-seller must have realized that the decedent might use the chemical to clean floors, as he did, the Court said: "In substantial measure the degree of care required of the deceased for his own safety would bear a direct relation to the adequacy of the warning of danger. Implicit in the duty to warn is the duty to warn with a degree of in-

tensity that would cause a reasonable man to exercise for his own safety the caution commensurate with the potential danger."

The issue in this case was squarely placed on the adequacy of the label with the defense of contributory negligence on the part of the decedent. The Court took the position that the adequacy of the label was a question for the jury and not a question to be decided as a matter of law.

Because of the importance of this case, we are publishing below the full text of the Florida Supreme Court's ruling upholding the lower court. Whether or not Tampa Drug Co. will appeal to the United States Supreme Court is not known at this writing.

was delivered to Mr. Wait by Richardson. On the morning of March 20, 1954, the deceased with the assistance of one Nathaniel Morgan undertook to clean the floors of his home using the carbon tetrachloride. In doing so he poured about two inches of the liquid in an open pan. The two men then, on their hands and knees and using a piece of cloth, dipped the rag into the pan of the fluid and spread it over the floor. Both of the men noticed a strong odor emanating from the liquid. Mr. Wait worked at his project for about an hour when he complained of a headache and dizziness. He discontinued the activity but Morgan continued to work and even worked some the following day to complete the job. Morgan suffered no injury. However, by the middle of the afternoon of March 20 Mr. Wait was definitely ill. His illness became progressively worse until he died on April 2, 1954.

Several doctors testified that he died as a result of carbon tetrachloride poisoning. The record suggests that the janitor Richardson had informed Mr. Wait that a person had to be careful when using carbon tetrachloride. It was also shown that during the time that he was working with the liquid three windows and a door to the room where he was working were all open. Following the death of her husband Mrs. Wait instituted this action against Tampa Drug Company. Her complaint was framed in two counts. In one she grounded her cause on the alleged negligence of the drug company in placing on the jug of carbon tetrachloride a label which was inadequate to warn the deceased of the dangerous characteristics of the product and the fatal effects which might follow the use thereof. The other count was grounded on the alleged inadequacy of the label to warn the public of the characteristics and fatal potentialities involved in the use of the liquid. A copy of the label was attached to the complaint as an exhibit. It read as follows

"CARBON TETRACHLORIDE— Technical—

IN THE SUPREME COURT OF FLORIDA JANUARY TERM, A.D. 1958

TAMPA DRUG COMPANY, a Corporation.

Appellant,

15.

MARY WALLACE WAIT,

Appellee.

CASE No. 29,203 HILLSBOROUGH COUNTY

Opinion filed May 7, 1958

An Appeal from the Circuit Court for Hillsborough County, Harry N. Sandler, Judge

Chester H. Ferguson, M. Craig Massey, Doyle E. Carlton, Macfarlane, Ferguson, Allison & Kelly and Mabry, Reaves, Carlton, Fields & Ward, for Appellant

Cody Fowler and Margaret Deaton of Fowler, White, Gillen, Yancey & Humkey, for Appellee

THORNAL, J.

Appellant Tampa Drug Company which was defendant below seeks reversal of a final judgment based on a jury verdict in favor of appellee Mary Wallace Wait who as plaintiff below claimed damages for the wrongful death of her husband.

Numerous points cited to justify reversal are discussed hereafter. In the ultimate the major propositions are the sufficiency of the complaint to state a cause of action and the sufficiency of the evidence to support the verdict and judgment.

The deceased Thomas Bryan Wait was at the time of his death the 38-year old sales manager of Krauss Brothers Lumber Corporation. He and his 29-year old widow, the appellee, were the parents of three minor children. On March 19, 1954 having need for a substance to clean the floors of his home, Mr. Wait requested one Willie Richardson, the janitor for Wait's lumber company employer, to purchase for him a gallon of carbon tetrachloride which had been recommended by Richardson as an effective floor cleaning fluid. The purchase was made from appellant Tampa Drug Company which advertised itself as a "manufacturing chemist." The jug of carbon tetrachloride

"Useful as fire extinguisher. For cleaning clothing: solvent for fats, oils, varnishes, waxes, resins: exterminating weevils and insects in grain.

"Volatile Solvent-Vapor Harmful-

Everyone takes a shine to Dow borning Silicones...



#### Your assurance for repeat sales...profits

Make sure of customer satisfaction . . . formulate your polishes with Dow Corning silicone fluids. These high quality silicones make polishes take a shine in minimum time, and with minimum effort. The superior spreading and wetting characteristics of Dow Corning fluids always result in smooth, easy film formation. Your polishes produce the finest, deepest gloss . . . provide

truly durable protection, whether they're formulated for furniture, appliances, glass or autos.

And remember — not only do Dow Corning Silicones give your products superior quality, but you also benefit from the prestige and appeal that Dow Corning Silicones have acquired in virtually every industry. For samples, literature, technical service contact any of our branches or write Dept. 256.



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MIDLAND, MICHIGAN

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ATLANTA BOSTON CHICAGO CLEVELAND DALLAS DETROIT LOS ANGELES NEW YORK WASHINGTON, D. C.

"Use with adequate ventilation— "Avoid prolonged or repeated breathing of vapor. "Avoid prolonged or repeated contact with skin.

# "DO NOT TAKE INTERNALLY. "TAMPA DRUG COMPANY "Manufacturing Chemists "Tampa, Florida"

Mr. Wait had read the label before using the chemical.

The testimony reveals that "carbon tetrachloride technical's means almost one hundred percent pure carbon tetrachloride. In other words, it means that the chemical has not been diluted by mixture with any other substance. It is clear from the record that this chemical can produce harmful results, even death, when taken internally, when the vapor therefrom is breathed excessively or when the skin is subjected to prolonged contact with it. The effect of excessive exposure in any one of the three forms is that the circulatory system becomes saturated with the toxic vapors with the result that the kidneys and liver completely deteriorate. When this happens, of course, death results as it did in the instant case.

After motions to dismiss the complaint were denied, the appellant drug company answered by denying the negligence and by asserting that Mr. Wait by his own negligence proximately contributed to his own injury and death. In addition the drug company undertook to defend by answering that the label used was substantially that required by the so-called Federal Insecticide, Fungicide and Rodenticide Act (Sections 135-135K, Title 7. United States Code Annotated). They tendered an additional defense that the label used was substantially similar to that prescribed by the Commissioner of Agriculture of the State of Florida pursuant to Chapter 487, Florida Statutes, and promulgated in accord with the State statute supplemented by the federal act above

The trial judge struck the defenses grounded on the state and federal statutes. The cause ultimately went to trial on the issues of negligence and contributory negligence. After a prolonged and hotly contested trial, the jury rendered a verdict in favor of Mrs. Wait in the amount of \$160,000. The trial judge had previously denied appellant's motion for a directed verdict. A motion for new trial was denied. The trial judge then entered a judgment pursuant to the verdict. Reversal of this judgment is now sought.

It is contended by the appellant drug company that its motion to dismiss the complaint should have been sustained for the reason that the label therein described was sufficient as a matter of law. It is further contended that appellant's motion for a directed verdict at the close of all of the evidence should have been granted for the reason that the evidence showed no liability on the part of the drug company and on the contrary established contributory negligence as a matter of law. Appellant further contends that

the trial judge committed error in striking its defenses grounded on the state and federal statutes and in addition committed numerous errors in admitting certain testimony and in giving various instructions to the jury. Finally, it is asserted that the verdict of the jury was excessive.

The appellee here contends that the trial judge ruled correctly on the pleadings, that his jury instructions as a whole correctly stated the law applicable to the case and that in the ultimate the matter was properly submitted to the jury which had abundant evidence to support its verdict.

In proceeding to our ultimate judgment we announce herewith certain controlling propositions of law. We will then apply these rules to the situation presented by the instant record. Various points and contentions urged by the parties which have not been detailed above will be covered in our consideration of the appeal in the light of the rules of law applicable.

It will be remembered that Mrs. Wait sued the drug company for its failure to warn of the dangers inherent in the use of carbon tetrachloride by virtue of the inadequacy of the label attached to the jug of the chemical which was sold to Richardson and purchased by him at Mr. Wait's request. After proceeding through the preliminary pleading stages the trial of the case revolved around the primary issue as to whether the warning printed on the label was adequate to fulfill the duty imposed by law on the appellant. Aside from the interesting testimony of various expert chemists and physicians, the trial developed into a contest of labels. The appellee-plaintiff produced in evidence numerous labels used by nationally known manufacturing chemists, all of which she contended were more complete and more thoroughly effective to warn of the dangers inherent in carbon tetrachloride as well as the potential harm that might ensue upon use of the liquid. She introduced also a label promulgated by the Manufacturing Chemists Association, a nationwide organization of leading manufacturing chemists. It developed that the label was practically the same as the one used by the nationally known manufacturing chemists which she placed in evidence. These chemists were members of the Association.

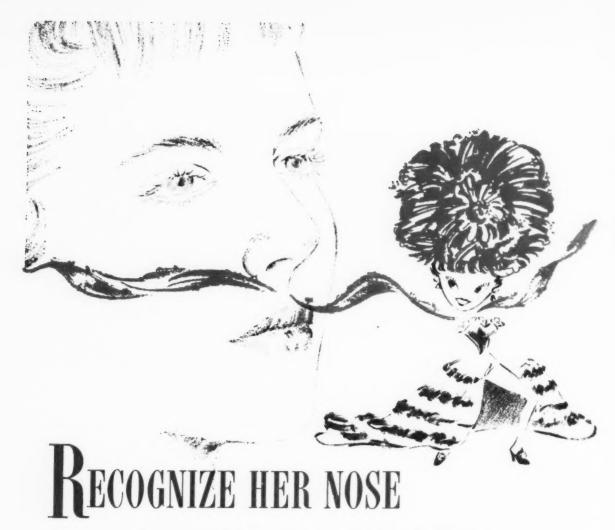
The appellant in turn placed in evidence various labels which were used by other suppliers. These were intended to show by comparison that appellant's label was adequate. In addition appellant undertook to place in evidence a label approved by the Secretary of Agriculture of the United States under the Federal Insecticide, Fungicide and Rodenticide Act which label in the view of appellant established a standard of care. Proceeding on this motion appellant undertook to show that it had met the standard of care prescribed by the Federal Insecticide Act and regulations promulgated pursuant thereto. Although the trial judge had stricken the defenses based on the federal statute which were intended as a complete bar to the action he permitted the federally endorsed label as evidence of an adequate label consistent with appellant's contention.

In this regard it should be recalled that the liquid used by Mr. Wait was "technical" or practically one hundred percent carbon tetrachloride. The Federal Insecticide Act is a statute regulating the manufacture and distribution of insecticides, fungicides and rodenticides. The record before us appears to establish clearly that carbon tetrachloride in pure undiluted form is never used for one of these purposes. In other words, the label was approved by the Secretary of Agriculture as a minimum warning of the dangers involved in any product intended for use as an insecticide, etc., containing carbon tetrachloride to the extent of ten to twenty percent of the insecticide rather than for use to warn against the hazards of pure one hundred percent carbon tetrachloride.

We are here confronted with the problem of determining the extent of the duty of a distributor of a latently dangerous product which has a potential capacity for causing injury. We no longer need concern ourselves with a search for the presence of "privity" between the distributor and the ultimate consumer who suffers the injury. Ever since the celebrated opinion of the late Justice Cardoza in MacPherson v. Buick Motor Co., 217 N.Y. 382, 111 N.E. 1050, the courts have ceased to clothe the responsibility of the distributor with the protective cloak of the privity requirement. In other words, obligation of the distributor of a commodity inherently burdened with a potential danger is not restricted to the individual with whom he immediately does business. It is not just a contractual obligation. It is an obligation arising out of a duty to take reasonable precautions to avoid reasonably foreseeable injuries to those who might use the commodity. See Matthews v. Lawnlite Company, Fla. 1956, 88 So. 2d 299; also see Pierce v. Ford Motor Company, 190 F. 2d 910, CCA 4, cert. denied 342 U.S. 887 (1951); Prosser on Torts, pp. 206-210, 674-683; Restatement of the Law of Torts. Sections 388 and 398.

The measure of the duty of the distributor of an inherently dangerous commodity is now well established to be the reasonable foreseeability of injury that might result from the use of the commodity. The care exercised in fulfilling this duty is in turn measured by the dangerous potentialities of the commodity as well as the foreseeable uses to which it might be put. When a distributor of an inherently dangerous commodity places it in the channels of trade, then by the very nature of his business he assumes the duty of conveying to those who might use the product a fair and adequate warning of its dangerous potentialities to the end that the user by the exercise of reasonable care on his own part shall have a fair and adequate notice of the possible consequences of use or even misuse.

We are not here concerned with the necessity for a technical discussion of the



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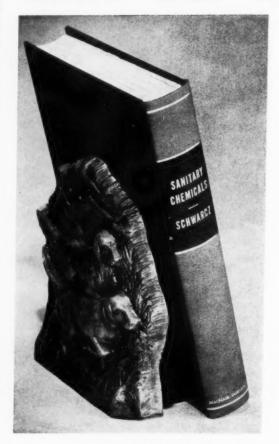
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distinctions between directions and warnings. McClanahan, et al. v. California Spray-Chemical Corp., 194 Va. 842, 75 S.E. 2d 712. The issue here involved was the adequacy of the warning as against the alleged failure of the deceased to observe the caution suggested by the warning. The label contained no specific directions as to use for any particular purpose, although it did announce that the commodity was "useful" for certain purposes. The purpose for which Mr. Wait used it was within the stated purposes for which the label advertised that it was "useful."

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We are not here dealing with liability resulting from a defect in an article that is ordinarily harmless. As previously pointed out we here consider the problem as it relates to an inherently dangerous commodity: that is, a commodity burdened with a latent danger which derives from the very nature of the article itself. With regard to this type of article the liability of the manufacturer or distributor is predicated on a failure to give adequate warning of the inherent danger. Carbon tetrachloride appears to us to be a prime example of this type of commodity. It is a clear liquid with a sharp odor similar to that which emanates from chloroform. When properly employed it has many useful purposes, such as, a cleaner, a fire extinguisher, and, in diluted portions, an insecticide. The last use appears to be going out of date. However, under certain circumstances the vapors from the chemical can be deadly as was demonstrated in this case. It can be equally fatal if taken internally. Prolonged exposure of the skin to the chemical can have fatal results. Obviously, although the product appears harmless in and of itself, it has lurking in its innocent appearance death-dealing potentialities. It is with regard to this type of product that the law imposes upon the distributor a duty to the using pub-This duty simply is to take reasonable precautions to supply users with an adequate warning notice that would place them on their guard against the harmful consequences that might result from use of the commodity.

In the instant case the appellant asserts that the duty is discharged if the distributor labels the container with a notice that warns against dangers involved. The appellee appears to contend that the label should do more and warn against the potentially fatal or exact harmful consequences of misuse. We think this distinction is more apparent than real. This is so for the reason that if the label adequately warns of the danger, it appears to us that the potential harmful consequences would then become apparent from the warning. In view of the prevalence of authorities imposing this type of duty on the manufacturer or distributor of an inherently dangerous commodity, we are led to the conclusion that the plaintiff's complaint stated a cause of action and was not vulnerable to the motion to dismiss leveled against it by the defendant drug company.

We move on to the next stage of the case. It will be recalled that the case

went to the jury on the issues of negligence and contributory negligence. It is insisted by the appellant that the evidence clearly established its freedom from guilt and with equal compulsion leads to the motion that Mr. Wait was guilty of contributory negligence. In this regard appellant urges us again to hold as a matter of law that the label attached to the jug containing the deadly chemical was adequate to give notice to Mr. Wait that its use could result in his death. It is asserted that the label warned that it should be used "with adequate ventilation"; that "prolonged or repeated breathing of the vapor" should be avoided; that 'prolonged or repeated contact with skin' should be avoided. It is also contended in support of appellant's position that the deceased was an alert, intelligent man who had been advised by his "agent", the purchaser of the chemical, that he should be careful. In this connection we are asked to conclude that the label was

We wish to make clear that we do not here intend to hold that the distributor of an inherently dangerous commodity is an insurer of the safety of the product which he puts in circulation. The burden remains on one who claims a negligent failure to warn of an inherent danger to prove that the distributor knew, or by the exercise of reasonable care should have known, of the potential danger and in the reasonable course of his business should be able to foresee the possible uses of the commodity as well as the potential damage or injury that might result from such use.

The differences in the warning notices placed in evidence in the case at bar rather clearly demonstrate the difference in the degree of foresight exercised by manufacturers and distributors of the same commodity. It certainly was evident from this record that the appellant drug company was thoroughly familiar with the dangers inhering in the use of carbon tetrachloride. The label which it attached to the jug stated that it was 'useful" among other things as a "solvent for fats, oils, varnishes, waxes, resins Maize v. Atlantic Refining Company, 352 Pa. 41, A. 2d 850, 160 A.L.R. 449. The drug company was increiore thoroughts familiar with the uses to which the commodity might be put. With this knowledge the appellant, which had been in business for many years, through its officers and agents certainly must have realized that the chemical would be used for the purpose for which it was employed by Mr. Wait. We think that with this knowledge the appellant was charged with the burden of fore-warning potential users of the inherently dangerous nature of the commodity.

While some might conclude that the notice on the label quoted in the fore-part of this opinion would meet the requirements of adequacy, we do not feel that such a conclusion can be reached as a matter of law. The differences in the various labels in evidence of themselves demonstrate that reasonable minds might well differ on the sufficiency of the notice furnished by this label. We think

that the sufficiency of the warning to place a reasonable man on notice of the potentially fatal consequences of the commodity here involved and under the conflicting evidence in this record justified submitting the problem to the jury for determination. Similarly whether Mr. Wait exercised reasonable care for his own safety was also a jury issue. In substantial measure the degree of care required of the deceased for his own safety would bear a direct relation to the adequacy of the warning of danger.

Implicit in the duty to warn is the duty to warn with a degree of intensity that would cause a reasonable man to exercise for his own safety the caution commensurate with the potential danger. It is the failure to exercise such a degree of caution after proper warning that constitutes contributory negligence in a case such as this. Cf. Shaw v. Calgon. Inc., 35 N.J. Super 319, 114 A. 2d 278. We do not feel that the trial judge committed error in denying appellant's motion for a directed verdict and in submitting the cause to the jury.

With further reference to this point and particularly in regard to our holding on the sufficiency of the complaint, appellant relies with considerable confidence on the decision of the Supreme Court of Missouri in McClaren v. Robins & Co., 349 Mo. 653, 162 S.W. 2d 856. In that case the trial judge sustained a demurrer to the evidence at the close of the testimony. He was of the view that the warning label was sufficient as a matter of law. The case was disposed of on a stipulation of facts to the effect that other manufacturers of the chemical used a similar label. This phase of the case is distinguishable from the situation presented by the instant record. Aside from that proposition, however, we do not agree that in a case such as this where the jury may draw varied inferences from the evidence properly before it that the trial judge should enter into the jury box and become an arbiter of the facts. On this score we prefer to follow the views expressed by the Supreme Court of Pennsylvania in Maize v. Atlantic Refining Company, 352 Pa. 51, 41 A. 2d 850, 160 A.L.R. 449. See also Tomao v. A. P. DeSanno & Son, Inc., (C.C.A. 3rd, 1954) 209 F. 2d 544; Hopkins v. E. I. duPont de Nemours & Co., (C.C.A. 3rd 1952) 199 F. 2d 930; Gall v. Union Ice Co., 108 Cal. App. 2d 303, 239 P. 2d

During the trial the judge permitted in evidence labels promulgated for the use of the chemical industry by the Labeling Committee of the Manufacturing Chemists Association. This is an organization numbering among its membership many of the major chemical manufacturing concerns in the United States. Two of the plaintiff's expert witnesses were directly connected with the organization. The labels were not allowed in evidence to establish a conclusive standard of care. They were submitted to the jury along with all of the other evidence as a basis for comparing appellant's label

(Turn to Page 135)

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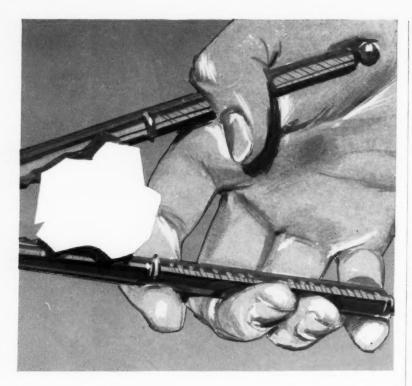
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Drew Names Cook

Irving L. Cook has been named sales director of E. F. Drew & Co., New York, it was announced recently by D. A. Coape Arnold, executive vice-president. Mr. Cook formerly was vice-president of Rockwood & Co., Brooklyn, N. Y. In his new post, he will be responsible for general sales administration and sales planning for all divisions of Drew.

#### James G. Park Retires

James G. Park, vice-president of Enjay Co., New York, recently announced that he will retire July I, after 38 years with the company. Mr. Park joined Enjay in 1920 as a sales trainee. He later was named sales manager of chemical products and in 1935 became vice-president. A frequent contributor of articles to trade and technical journals, Mr. Park is a member of the American Chemical Society, the American Institute of Chemists and the Society of Chemical Industry.

#### **Insecticide Toxicity**

(From Page 77)

popular recognition along with the red and green light, the skull and cross bones and the orange-yellow color of a school bus.

Packages sold within the borders of a state are often inadequately labeled. Many will have only the trade name and occasionally not even include the name and address of the seller. From point of view of the physician called on to treat a child who has taken a powder from an unlabeled package there is no more difficult or frustrating experience. Even more disturbing is the package that is labeled with all the ingredients but is misleading by the very nature of the label. An example of this last type of label is the roach powder containing 10 per cent DDT. The DDT was listed in letters an inch and a half high and in much smaller letters at the bottom. "sodium fluoride 40 per cent." If ever I've seen a booby trap this is

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Palmer Supplies Co. Times Star Bldg. Cincinnati 2, Ohio E. M. Walls Company San Francisco, Cal. it. Another example is the insecticide containing malathion, chlordane, and well down on the list, one of the most toxic materials used, thallium.

Some states are now taking steps to require proper labeling of all household products. The American Medical Association, the Manufacturing Chemists Association, and the Chemical Specialties Manufacturers Association have been working to achieve uniformity in

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"Most toxicity problems resulting from the use of household insecticides has resulted from accidental ingestion. When used according to proper directions there is little opportunity for harm from the usual type of household exposure."

these state labeling laws. If we get good state labeling laws, and I emphasize the word good, it will be

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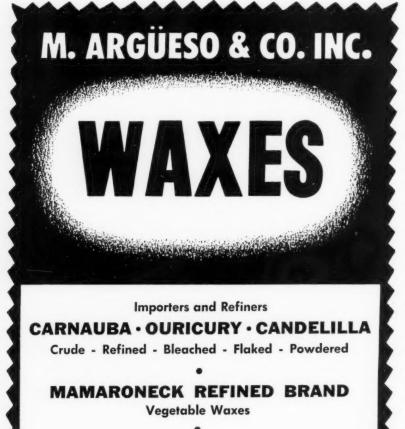
a great help in preventing poisonings from all household products. It will also help in insuring proper treatment when poisoning occurs,

Packaging: Not much attention has been given to the packaging of household insecticides to increase the safety of the product. This is particularly true of products packaged for local distribution. It is also true of materials distributed nationally. More attention should be directed to the design of containers which would be difficult for small children to open. Instead of making it easy to remove an insecticide from the package, perhaps the material could be packaged so as not to require any handling outside of the package. Possibly inserts could be prepared that would facilitate the removal of a predetermined quantity without breaking the seal on the total package.

Insecticides in pill form should be eliminated from the market. Insecticides used in a manner that is bound to attract children as well as cockroaches can and should be replaced by other methods of insect control.

Poison Control Centers: In the past five years a network of poison control centers has developed within the United States. More than 100 centers are now widely scattered over the length and breadth of the country. These institutions, usually located in hospitals or medical schools, are attempting to provide up-to-date information about product ingredients. This information is furnished to the medical profession to aid in the treatment of poisonings. The centers also attempt the education of the public in the prevention of poisonings.

The local centers are aided in their efforts by the recently established National Clearing House for Poison Control Centers of the United States Public Health Service. This organization distributes product and treatment information to the centers throughout the country. Some of the larger manufac-



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turers of insecticides and other household products are now routinely furnishing information about the toxicity of old and new products to the poison centers either through the National Clearing-House or directly. Some insecticide producers have provided the name (s) of their employees who may be called at any hour of the day or night if additional information is needed. Both these steps are extremely helpful to the hard pressed physician called on to treat a case of poisoning. When manufacturers, formulators and distributors all follow this practice, a long step will have been taken to prevent unnecessary injury and death.

#### Present and Future Outlook

Most of the toxicity problems resulting from the use of household insecticides have resulted from accidental ingestion. With use according to proper directions there is little opportunity for harm in the usual type of household exposure. Those who insist on having insecticides around the home that are intended only for field use, will run the attendent risk. With greater attention to labeling and packaging the hazard from household insecticides will be reduced even below its present low level. The development of safer insecticides and increased industry cooperation with the poison control centers will further decrease any hazard. As the manufacturers and formulators recognize that their responsibility includes the need to know all about the potential toxicity of their products, we will have much less of a toxicity problem.

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L. C. McGee: The Toxicology of
Some Agricultural Chemicals. A Re-Accidental Poisonings of Human Beings by Chlorinated Insec-ticides. Tr. of the American Clinical and Climatological Assoc. 68, 1956.



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#### **Detergent Containers**

(From Page 49)

same features that have made the round non-drip can popular. Specifically, this container has a top end fitted with a non-drip plastic nozzle having a ¾ inch opening and a cemented side seam which allows full inside enameling and complete outside lithography. It can be manufactured from any of the usual types of plain or enameled plate. The can is closed with the reclosure feature plastic cap.

The familiar insecticide can also has an oblong shape. It is manufactured with various types of side seam constructions and several different sizes of top end fittings. The chart on page 48 illustrates the many variations of this container which are now available.

Cans supplied with cemented side seams can be manufactured with any of the plate types dis-

cussed. Those that are soldered are only available with tin and terne plate. For products that can be packed in inside soldered side seam oblong containers, the containers can be fully lithographed outside. Inside enameling with the usual enamel materials can be supplied on cemented side seam containers only. The "Upressit" fitting listed in the table adds a convenient snap-on reclosure feature to the large sizes of the oblong can. The C & E or "crimp and expand" closure is useful for products that will be consumed or emptied completely at one time. It has no reclosure feature. This type of closure is popular for anti-freeze products but also could have application in the field of institutional detergent products where the product is emptied from the can into a dispenser or cleaning agent reservoir for large mechanical cleaning equipment.

The five gallon square can is manufactured with soldered end seams rather than conventional compound lining of the ends to provide a leakproof seal at the body and end juncture. It is also constructed with two soldered side seams. A great many fittings can be applied to this can including a seven inch doubletite plug closure and several sizes of screw necks. The screw necks can be fitted singly or in combination with additional screw necks of the same or a different size. Type of fittings depends upon the features desired by the packer for his product.

#### Liquid Soaps

True soaps as a class have declined markedly in usage during the past several years because of the rapidly increasing popularity of synthetic detergents. Liquid soaps which are still popular for use in dispensers in public washrooms, swimming pool showers, etc, may not have been affected as greatly as the solid, powdered, or flake soap products.

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## **DEPTH OF GLOSS**

An important floor wax sales advantage is yours with proven copolymer emulsions from Polyvinyl Chemicals!

**NEOCRYL A234U** is well known for its unmatched "film clarity". In your floor wax formulations, it can help bring out the optimum "depth of gloss", imparting a deep rich lustre to the finished floor. NEOCRYL A234U, largest selling acrylic polymer for floor waxes, also gives you extremely light colored formulations, one of today's hardest hitting sales features.

NEOREZ SI: A new polystyrene emulsion which you will find worth your while to examine. Lower plasticizer requirements mean superior soil resistance and less dirt pickup. Good balance between water resistance and removability; shows least whitening on damp mopping. Samples and personal technical assistance on the use of NEOCRYL and NEOREZ polymers gladly supplied.

POLYVINYL CHEMICALS, INC.
26 HOWLEY STREET PEABODY, MASSACHUSETTS

ly packaged in one gallon oblong cans or other one gallon containers. For years it has been the custom to pack a soldered side seam can fabricated from plain hot dipped tin plate. This container has limitations for some varieties of liquid soap. Pickup of tin and iron from the container is possible and this may cloud the product. The head-space of the can may corrode, and the nozzle area is particularly vulnerable because of the cut edge of plate and because of the soldering operations in nozzle assembly.

The packaging materials reguirements of synthetic liquid detergents have led to some developments which may hold advantages for the distributors of liquid soaps. The gallon oblong can may now be fabricated from enameled plate with a cemented side seam. This can is fitted with a plastic nozzle and cap. The advantages are apparent. Grades of plate which are more economical than hot dipped plate may be used. Product quality protection far beyond that attained in the plain tin plate can is possible. For product formulations which are highly reactive with tin, a CTS can, plain or enameled, has proved practical for some products, and may prove feasible for others.

The 12 to 32 ounce metal containers spurred acceptance of synthetic liquid detergents, and it is possible that these containers may also find application for liquid soaps. The containers provide superior product protection and greater consumer convenience than containers available in the past.

(To be continued)

#### Lehmann Appoints Muller

C. W. Muller has been appointed sales manager of J. M. Lehmann Co., Lyndhurst, N. J., manufacturers of machinery for soap, ink, paint and related processing industries. Mr. Muller has been with Lehmann for 13 years, 11 of them in the engineering department as machinery designer and production engineer. For the past two years, he has served the company as a sales engineer.



Investigate Tris(hydroxymethyl)nitromethane! Inhibits growth of bacterial flora in cutting oils. Dramatically checks unwanted microbiological growth in aqueous systems. Effective in protecting recirculating water systems, cooling towers, and oil well flooding operations. Prevents deterioration of non-protein sizing and adhesive solutions during storage.

#### PROPERTIES TRIS NITRO (CH<sub>2</sub>OH)<sub>3</sub>CNO<sub>2</sub>

Molecular Weight 151.12
Melting Point °C, approx. 175-176
pH of 0.1M Aqueous Solution at 20 °C 4.5
Solubility in water, g/100 ml at 20 °C 220
Very soluble in alcohols,
sparingly soluble in hydrocarbons

#### **CSC CHEMICALS FOR INDUSTRY**

#### ALCOHOLS

Methanol Butanol Ethyl Alcohol

#### AMINES AND AMMONIA

Ammonia, Anhydrous and Aqua Ammonium Nitrate, Solid and 83% Sol. Methylamines Benzyltrimethylammonium Chloride

Hydroxyethyltrimethylammoniumbicarbonate

#### **ESTERS**

Amyl Acetate
Butyl Lactate
Butyl Lactate
Dibutyl Phthalate
Tributyl Phosphate

Butyl Acetate
Butyl Stearate
Ethyl Acetate

#### **NITROPARAFFINS**

Nitroethane 2-Nitropropane
Nitromethane 1-Nitropropane
Alkaterges Diamines
Aminohydroxy Compounds
Chloronitroparaffins

#### PHARMACEUTICALS, BULK

Bacitracin Cycloserine Riboflavin, U.S.P. and U.S.P., R.S.

#### OTHER CHEMICALS

Acetone Formaldehyde Pentaerythritol

### COMMERCIAL SOLVENTS



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# cut pail-handling time 90% with new "Handy-Pak"!\*



NOW! BENNETT OFFERS BOTH STEEL AND FIBRE SHIPPING CONTAINERS IN A WIDE VARIETY OF SIZES. Bennett

Convince yourself! Get full facts on this recordsmashing economy story ... send today for our new folder, "Any Way You Look At It."

\*Trademark & Pat. Pending





# Packaging

#### AEROSOLS · LIQUIDS · PASTES · POWDERS

Edward J. Breck, president of John H. Breck, Inc., Springfield, Mass., shows new high-density polyethylene bottle his company recently adopted as a "carrier" for its professional size (16 oz.) "Banish" dandruff treatment shampoo. Blown plastic bottle supplied by Plax Corp. using Hercules Powder Co.'s "Hi-fax" plastic. For details on new package see page 119.

Automotive Chemicals Cleaners Detergents Deodorants Disinfectants Floor Products Insecticides Laundry Bleach **Metal Cleaners Moth Products** Polishes Shampoos **Shave Products** Soaps Liquid Starch **Toiletries** and other **Chemical Specialties** 

A market for over 28 billion packages annually



# OWENS-ILLINOIS ASSURES YOU A COMPLETE PACKAGING APPROACH



#### Co-ordinated Research

Pure research into fabrication of glass, packaging research into processing and handling methods in customer plants, market research into consumer attitudes. All add up to greater packaging value.



#### **Engineering Design**

At Owens-Illinois, your package's three needs are taken into account: 1) Considerations of its function in the retail store, 2) its operating efficiency, and 3) its consumer utility.



#### The Right Container

There's an O-I container to meet your special needs: Duraglas containers; Libbey Safedge packing tumblers or premiums; Kimble Ampuls and Vials; and a variety of plastic containers.



#### The Right Closure

Through long and continuing research O-I has developed the most advanced metal and plastic closures. Helping you choose the right closure is another function of O-I's packaging service.



#### Needed Fitments

O-I specialists are keenly aware of sales benefits derived from plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.



#### **Merchandising Cartons**

Modern cartons developed to serve you efficiently in the retail store and warehouse... as well as on your own filling line and in transit. This is the new openized carton with easy-open flaps.







They're easy to store, easy to use, when packed in glass

# For a brighter, lighter life... so many wonderful household products are packaged in glass

Today's work-saving household products such as window cleaners, bleaches, waxes, polishes, liquid detergents, and many others, make housekeeping an easier job.

Packaged in glass, these products not only look more attractive, for faster sale—but are simple to handle and provide maximum assurance of protection. It is the unique quality of *inertness* that enables glass to protect such an astounding *range* of products so valuable and useful in every-day life.

Owens-Illinois continually works to produce better, stronger, more sales-attracting glass containers for you and your customers...gives you a complete sales-package, from container design, closure or fitment, eye-catching label, to merchandise carton. Call the Owens-Illinois office nearest you for the Duraglas Container to help sell...and continue to sell...your product.

DURAGLAS CONTAINERS
AN (1) PRODUCT

OWENS-ILLINOIS

GENERAL OFFICES • TOLEDO 1, OHIO

# AEROSOL



# PACKAGING

## can give your sales "steamroller" power!

Here's how General Chemical can help you get started...

If you've been watching the aerosol field, you've seen product after product come out in aerosol form and roll over its competition with irresistible force.

Could you market an aerosol that would have similar success?

#### A qualified "yes"

If your products can be sprayed, brushed on, dusted or daubed, aerosol packaging may well give them that vital "push." And now's the time to get started—while the field is still growing . . . while consumers still think of convenience packaging in aerosol form as "new" and exciting.

#### General Chemical can help you

As the producer of "Genetron" aerosol propellants, General Chemical has the basic knowledge and specialized experience you need to get started. We will be glad to supply market information and technical data. We can tell you about promising new types of aerosol formulations developed in our laboratories. We can tell you about qualified contract fillers—who can take over the entire production job for you, from test market quantities to commercial production. The fact is, you don't have to invest a cent in special equipment or personnel to get into this profitable market!

These information services of General Chemical are available to you without cost or obligation. Why not take advantage of them now? Just call or write "Genetron" Department, General Chemical Division, Allied Chemical Corporation, 40 Rector Street, New York 6, N.Y.

## genetron®

aerosol propellants

Putting the <u>push</u>
in America's
finest aerosols

GENERAL CHEMICAL DIVISION 40 Rector Street, New York 6, N. Y.



# Maryland glass designers work closely with molds for design fidelity...

ESSENTIALLY



# Package design begins with an idea

Every craftsman knows his tools, but the creative package designer must do more—first he must bring an idea to life. An idea that says Yes to questions like: Is this container distinctive? Will it sell on the shelf? Does it pack properly, ship safely? Our design department specializes in designs that stop the eye . . . start the sale. For an affirmative solution to your design problems, contact Maryland Glass Corporation, 2147-53 Wicomico St., Baltimore 30, Md.



sizes . . . is ready for immediate ship-

MARYLAND GLASS
Blue or Flint · Jars and Bottles

## Packaging NOTES

#### **Plastics Dominate 27th Packaging Show**

HOST of new ideas in packag-A ing, packaging materials and packaging equipment highlighted the 27th National Packaging Show of the American Management Association, held May 26-30 at the New York Coliseum. An attendance record of 35,000 was set at the first five-day packaging exposition, which was also the first to be held in New York in 14 years. Another record, also indicative of the importance of and interest in packaging, was the number of firms exhibiting-400in the 130,000 square feet provided by the Coliseum, Last year, at the International Amphitheatre, in Chicago, 383 exhibitors occupied 131,000 square feet of floor space.

Running concurrently with the show was the National Packaging Conference, held May 26, 27 and 28 at the Hotel Statler. Better than 1,000 packaging specialists attended these sessions, the program for which stressed the increasingly scientific nature of packaging techniques. Case studies of cost cutting approaches were discussed by representatives of several major national concerns during these sessions.

Immediately following the show the dates and places of next year's exposition and conferences were announced. The 28th National Packaging Exposition will be held April 13-16, 1959, at the International Amphitheatre, Chicago. The concurrent packaging conference is scheduled for Apr. 13 to 15 at the Palmer House, Chicago.

No sign of industrial retrenchment was evident at the New York show. Industry spokesmen forecast growing sales. A "major upsurge" in the use of aluminum foil for cans, containers, singleservice pouches and vacuum packaging was forecast by Paul Murphy, vice-president of Reynolds Aluminum Sales Co., Louisville, Kv., which had at the show, he said, the largest display of aluminum packaging in industry history. Already more than 100 billion packages a year, many of which are for soaps and synthetic detergents, utilize aluminum in one form or another, he reported. The use of aluminum foil for packaging doubled in volume from 1952 to 1956.

A new machine expected to boost the use of aluminum foil in packaging was shown publicly for the first time by Gulton Industries, Inc., Metuchen, N. J. Hand-operated, the unit employs ultrasonic waves to weld aluminum foil in continuous seams without heat or solder. According to the manufacturer it makes aluminum foil packages that are air-tight and resistant to all penetration but puncture or tearing.

The increasingly important role of plastics in packaging was very evident at the show. For instance, Monsanto Chemical Co., St. Louis, showed packages made of plastic that are cheap enough to compete with paper for throw-away containers. Monsanto's pressureformed disposable styrene containers can be used as a bar soap package and later double as a soap dish. Such transparent containers, made by Anderson Tool Co., Ludlow, Mass., are pressure formed on highspeed, automatic equipment. They are made from "Polyflex" 100, a biaxially oriented styrene sheet produced by Plax Corp., from Monsanto's "Lustrex" styrene.

Continental Can Co., New York, through its Shellmar-Betner Flexible Packaging Division, Newark, O., announced the first commercial availability of "Conolex," a linear polyethylene film that incorporates such qualities as stiffness, high surface gloss, a built in tear tape feature, crystal-like clarity and ability to stand a wide temperature

range. Developed from linear resins of the "Marlex 50" polyethylene type, produced by Phillips Chemical Co., Bartlesville, Okla., low-cost "Conolex" is expected to boost present polyethylene use and open new areas for film overwrap packaging.

The unique physical characteristics of "Conolex" permits opening of a package made of the material by simply tearing a strip of the film, already notched in the linear direction. Its linearity allows "Conolex" to serve as its own neat tear tape.

Continental also shows its complete lines of containers for a wide range of chemical specialties including aerosols and liquid detergents.

Clear plastic tubes for packaging "Prell" concentrate shampoo (see photograph on page 122 of this issue) were introduced by Bradley Container Corp., Maynard, Mass., subsidiary of American Can Co., New York. The tubes are internally coated for retention of perfuming materials and other essential ingredients. In addition to the features of visibility of contents the tube will not break if dropped and will not drip if the cap is left off. "Prell" concentrate will be marketed in four plastic tube sizes: 3/4 ounce, 1.7, three and five ounces, A demonstration of the filling of the new tubes was performed by Acepak, Inc., Chicago contract packagers.

The full line of American cans for all types of chemical specialties, including liquid detergents and aerosols were also featured in American Can Co.'s booth.

A new "Crown 28" rotary purging machine, engineered and manufactured by Crown Cork & Seal Co., Philadelphia, designed to remove oxygen from packaged granular products, made its debut at the show. Crown's exhibit included, too, the company's full line of metal containers for all types of chemical specialties.

A novel feature, but one which has serious overtones for everyone concerned with pressure packaging, was the public debut of



# HERE'S HOW INLAND HELPS JOHNSON'S WAX LIGHTEN THE BURDEN OF HEAVY TRAFFIC FLOORS. When the makers of Johnson's Wax developed their entirely new STEP-AHEAD floor finish for heavy traffic commercial application, their next objective was delivery of this remarkably effective product into the hands of

Factory fresh condition, complete freedom from contamination, ease of shipment and readiness for use, were the primary considerations. Inland Steel Container packaging specialists had the answer to this requirement by supplying Johnson with a drum "protectioneered" with a lining that delivers STEP-AHEAD floor finish . . . ready for use anywhere in the world.

If you are looking for a complete packaging service for your old and new products, call your Inland Steel Container representative. Backing him up is Inland's nationwide reputation for—solving the tough ones!

\*the right container, with the right lining for your product

### INLAND STEEL CONTAINER COMPANY

Member of the TAND Steel Family

6532 South Menard Avenue, Chicago 38, Illinois Plants: Chicago - Jersey City - New Orleans Cleveland & Greenville, Ohio Full line of steel and stainless steel shipping containers, including galvanized and heavy duty ICC drums.



users, "as shipped."

pressurized coffee and sweetener at the booth of Fluid Chemical Co., Newark, N. J., contract packagers. Fluid served free coffee from pressure packages to a large number of persons attending the exposition. Probably this was the first pressurized food to be dispensed at the Packaging Exposition. The reaction was excellent, which may augur well for the future of aerosol dispensed foods.

Sun Tube Corp., Hillside, N. J., subsidiary of American Can Co., for the first time publicly took the wraps off its new aerosol valve for dispensing viscous products such as toothpaste. The Sun booth also included an exhibit of the company's complete line of tubes, as well as other of its valves for pressure packaging.

Other exhibitors of pressure packaging components and materials included Alpha Engineering & Machine Works, Mount Prospect, Ill.; General Chemical Division of Allied Chemical Corp., New York: E. I. du Pont de Nemours & Co., Wilmington, Del.; Tube Manifold, Inc., Tonawanda, N. Y.; Risdon Manufacturing Co., Naugatuck, Conn.; Builders Sheet Metal Works, Inc., New York: J. G. Machine Works, New York.

General Chemical, on behalf of its "Genetron" aerosol propellants, again featured its Aerosol Information Center, with booklets, pamphlets, bulletin and information on pressure packaging.

Du Pont's polychemicals department featured the new "Zytel" plastic bottles for aerosols. Coming in a variety of sizes and shapes, these nylon resin based plastic bottles are designed mainly for packaging of cosmetics and toilet goods in aerosol form.

The Risdon "GB" aerosol valve, with stock or custom-made actuator designs with ferrules to fit 20 mm and 15 mm containers, were featured at the exhibit of Risdon Manufacturing Co.

A complete line of aerosol filling equipment for both plant and laboratory was on display at the booth of Builders Sheet Metal

Works. Crimpers of hand operated or air powered design, combination can and bottle capper, various types of filling units and can pressure testers were shown by Builders.

Peterson Filling and Packaging, Co., Danville, Ill., featured its services as a contract filler for a wide range of products, both liquid and dry, pressure packaged and standard.

Glass containers were shown by both Wheaton Plastics Co., Millville, N. J., and Owens-Illinois Glass Co., Toledo. Wheaton also demonstrated plastic coated glass bottles for pressure packaging, as well as protective caps for aerosols. The O-I line for household chemical specialties in a wide variety of shapes and sizes was on display, as were the firm's line of plastic caps.

A new low cost, two line piston filler, designed to handle liquid, semiviscous or viscous products, was featured at the exhibit of Hope Machine Co., Philadelphia. Also displayed was a new, high-speed filler for small containers.

"New Way" labelers, an innovation of Chisholm-Ryder Co. of Pennsylvania, Hanover, were displayed by that firm. These units can be easily adjusted for different sized containers. The company's "can marker" for applying the product name in series around the body of the container prior to applying the label was also shown.

Other marking equipment was featured at the booth of Adolph Gottscho, Inc., Hillside, N. J. In addition to its "Rolaprinter" coding and imprinter, which was illustrated and described in the April issue of Soap & Chemical Specialties, the firm showed its new "Markcoder Portable Imprinter." This unit imprints up to 600 containers a minute by means of a flexographic printing system.

"Chemtite" a new labeling adhesive for adhering any type of label stock to glass containers was shown for the first time by National Starch Products, Inc., New York. The new adhesive is said to be both iceproof and water resistant.

A prediction that consumption of polyethylene film should climb to 300 million pounds by 1960, with most of it going into packaging applications, was made during the show by Vincent M. McCarthy, manager of polyethylene sales for U. S. Industrial Chemicals Co., New York. In the light of the fact that an estimated 200 million pounds were consumed in 1957, this would represent a growth of some 50 per cent in the next three years, he said.

#### **Mengle Heads GCMI**

Glenn A. Mengle, chairman of the board of Brockway Glass Co., Brockway, Pa., was elected president of the Glass Container Manu-

Glenn A. Mengle



facturers Institute at a meeting of the group's board of trustees, held May 22 in White Sulphur Springs, W. Va., as part of a three-day meeting. Membership of GCMI comprises 70 manufacturers of glass containers, closures, and supplies.

F. N. Dundas, executive vicepresident of Dominion Glass Co., Montreal, P. Q., was elected first vice president of the institute and C. G. Bensinger, executive vicepresident of Owens-Illinois Glass Co., Toleo, O., and president of the firm's glass container division was named second vice-president.

Mr. Bensinger was also elected to GMCI's board of trustees, succeeding W. J. Green, president of Thatcher Glass Manufacturing Co., Elmira, N. Y., who has completed his term. S. B. DeMerrell, vice pres-

#### FOR PRESSURE CANS





#### WITH AN UNRIVALED



#### SALES RECORD...



#### FOLLOW THE LEADERS TO CANCO



More shaving lather is sold in Canco pressure cans than in all other makes combined. Naturally, there are good reasons for this success!

Canco makes a full line of guaranteed pressure cans, in seven sizeswith standard one-inch cup openings or individually styled tops. To give you a round-the-can label design, Canco has developed the first commercial coated side-seam.

Canco also offers experienced help from technical service experts and other specialists. Even the Canco oval works for you! Through its toprated CBS-TV show, DOUGLAS EDWARDS WITH THE NEWS, Canco helps boost sales of aerosols in Canco cans. So-for any pressure product, take the leaders' tip and come to Canco first!

#### AMERICAN CAN COMPANY

Just Printed! Colorful folder on Canco products and services in the aerosol field. For a freecopy write to American Can Company, 100 Park Ave., New York 17, N.Y. ident of Anchor Hocking Glass Corp., Lancaster, O., and J. F. Wiley, member of the board of Tygart Valley Glass Co., Washington, Pa., were re-elected to the board.

Mr. Mengle joined Brockway Sales Co. in 1927, became executive vice president of Brockway Glass in 1933, president in 1949, and chairman of the firm last month. He has been a trustee of GCMI since May 1956 and is currently chairman of its market research and promotion committee. predicted figure of 345 million pounds annually.

Mr. Hinner pointed out that a blown "Hi-fax" container can be designed to weigh only three-fourths as much as a corresponding regular polyethylene container, one third as much as a metal unit, and only one-eighth the weight of a glass bottle. In addition to savings in freight costs, this means elimination of costly space-consuming protective packaging normally required in shipping, he said.

He also told of styling possibilities with the new material and new molding techniques which permit a broad range of intriguing shapes, excellent colorability, good surface finish, and a package that will not break or become disfigured.

#### **Breck Adopts New Plastic Shampoo Bottle**

THE introduction of a new highdensity polyethylene bottle to be used as a "carrier" for its professional size "Banish" dandruft treatment shampoo was announced recently by John H. Breck, Inc., Springfield, Mass. The announcement was made at a press conference in New York at which the presidents of Breck, as the user, Hercules Powder Company, as the producer of the new type polyethylene, and Plax Corp., as the bottle maker, were present.

Edward J. Breck, president of Breck, said the new 16 ounce package has proved to be an ideal one for the shampoo. The new bottle is compatible with the shampoo, it has high permeation resistance and has a shelf life expectancy of over two years.

Robert F. Elder, president of Plax Corp., declared the new container for "Banish" inaugurates a major stage in the evolution of the plastic container. His firm made the first "squeeze bottle" from low density polyethylene, he said, and has taken a leading part in the development of this type of package for the past 10 years. The new, high-density materials such as Hercules' "Hi-fax" used in the "Banish" bottle, open entirely new fields for blown plastic containers. Mr. Elder indicated the greater rigidity of the new material permits making containers with very thin walls, which are sufficiently rigid for handling on production lines. The thin walls, he said, mean economy in the use of material, and permit prices in the competitive range of glass bottles and metal cans.

A new process makes possible printing the bottle with the Breck label in the traditional red, black and gold colors in a single



This 16-ounce, cylinder bottle of white high density polyethylene was selected by John H. Breck, Inc., Springfield, Mass., for the professional size container of its "Banish" dandruff treatment shampoo. The bottle, made by Plax Corp., Hartford, Conn., marks the first entry of high density plastic bottles into the field of carrier packaging. Molded of Hercules Powder Co.'s "Hi-fax," the bottle is lighter than regular polyethylene containers of the same capacity.

operation, Mr. Elder said. Decorating has always been a serious problem for plastic bottles, because of the high cost of materials, according to Mr. Elder. Using a newly developed machine the method used to print the "Banish" bottle is said to be less than half what the same job would have cost if done by conventional screen-printing.

Albert E. Forster, president of Hercules Powder Co., introduced Elmer F. Hinner, general manager of the company's cellulose products department, who said "New polyethylene plastics coupled with new processing techniques indicate that previous predictions of the potential packaging market for polyethylene will have to be revised upward. He estimated that by 1960 there would be substantially more polyethylene being used in the packaging field than the previously

#### New Bennett "Handy-Pak"

Development of a new device for shipping steel pails was announced recently by Bennett Industries, Inc., Peotone, Ill. Called "Handy-Pak," the new unit consists of a top cap and bottom cap of corrugated board held together by steel straps. It can hold 27 pails, three layers of nine each. Use of the new package will increase storage space and reduce handling time, according the manufacturer. Pails may be unpacked and repacked as many times as necessary during shipping for filling and similar purposes.

New Bennett "Handy-Pak" for shipping steel pails can hold 27 containers.





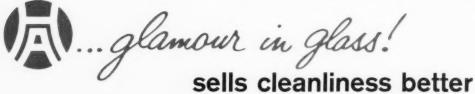
brings you the newest in glass!



The H-A"Imps"say-







No matter what your product improves, it will get more impulse sales with greater impact—packaged in glass by H-A! H-A's rich, even amber, and crystal-clear flint containers come in every size and shape you need, to please your product and your customer, too. Sell cleanliness in a beautiful package—call or write H-A, right now!

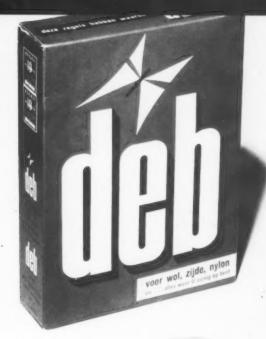
# HAZEL-ATLAS GLASS

division of CONTINENTAL © CAN COMPANY

WHEELING, WEST VIRGINIA

SOAP and CHEMICAL SPECIALTIES





"Corky," recently developed by Corky, Inc., Newport, Ky., is said to clean, polish and protect aluminum, stainless steel and chrome from oxidation. It is also claimed to remove accumulated rust from storm doors and windows, Steel pads for application come packed in parton, Eight-ounce container sells for \$1.95. stamps, consumer may receive various household linens or cash.

Addition of a rug and upholstery shampoo cleaner to its line of cleaning fluids has been announced by Afta Solvents Corp., New York. Known as "Afta-Glo", the product is said to be non-toxic,

# What's New?

Boyle-Midway Division of American Home Products Corp., New York, recently adopted new package for its "Griffin ABC" liquid wax shoe polish and "Griffin Allwite" shoe cleaner. New cartons and product labels have bright background colors to complement the bold black, red and white lettering. The "Allwite" packages feature sketches of either a young child or a nurse to emphasize the product's suitability for cleaning both baby and white uniform shoes.

New "Deb," introduced last month by De Haas & van Brero, Ltd., Apeldoom, Holland, the fourth largest soap and detergent company in the Netherlands, is an extra light duty synthetic detergent powder for washing woolens, nylon and related materials. Product carries α premium stamp worth 10 points. In exchange for a specified number of

non-inflammable and to contain no scap. The liquid concentrate makes eight times its volume by the addition of water. Available in 12-ounce and half gallon bottles, which retail for \$1.00 and \$3.50, respectively, "Afta-Glo" is a companion product to "Afta" cleaning fluid. Product will be marketed through maintenance and sanitary supply jobbers.

Development of a new all-purpose lubricant, called "Slix," was announced recently by Led-Col Co., Brooklyn, N.Y. Product is said to prevent sticking in locks, strike plates, wood screens, doors, metal windows, drawers and rubber. It comes in a 14-ounce bottle with a spray attachment. It may be applied with spray cloth, brush or squirt can on sticking surfaces. Once applied it is claimed to dry quickly with a hard, slippery finish.











New corrugated display unit recently was adopted by Barbasol Co., Indianapolis, on behalf of its "Barbasol" brand shave products. Display stand features a four-color riser on a two-color base. Riser holds two dozen aerosol containers of shave cream and 24 tubes. Aerosol can sells for 59 cents, while tube retails for 49 cents. The unit also doubles as a shipper as shown in photo at right. It is pre-packed with product assortment in a master corrugated box.





New liquid porcelain cleaner for cleaning toilet bowls, lavatories, urinals and bath tubs and shower stalls was introduced recently by Hysan Products Co., Chicago. Tradenamed "Porcena," the product is claimed to be a combination sanitizer and deodorizer. It is packaged in polyethylene bottle, which is fitted with a mop tray designed to catch any dripping from the yarn mop which is supplied with the cleaner.

Helene Curtis Products, Inc., Chicago, is now introducing its "Enden" dandruff treatment shampoo nationally in a new clear golden liquid form. The company claims it is supporting the product with the heaviest advertising campaign ever to back a shampoo. Available in medium and large size, product retails for 79 cents and \$1.50, respectively, and comes in a plastic container.





J. A. Wright & Co., Keene, N.H., has introduced its new liquid "Silver Cream," in 7½ ounce "I" style can manufactured by the American Can Co., New York. The product is designed for cleaning silverware and for quick touch-up cleaning of fine silver articles. The product is being marketed nationally.

New type ceramic tile and mortar cleaning compound, tradenamed "Tilex," is now available from Time Chemical Co., Chicago, in one gallon jugs for industrial applications. The product is claimed to remove scum, alkali, fungi and mineral deposits, rust stains; and hard water deposits. In addition to cleaning the mortar between tiles, "Tilex" restores the color and luster of ceramic tile, the manufacturer says.

SOAP and CHEMICAL SPECIALTIES

New aerosol bath powder, introduced recently by Millot, Inc., New York, comes in "Crepe de Chine" fragrance, similar to the company's standard bath powder. Tradename of the product is "Poudre Glacee." Retails at \$3.50. Can is Crown 'Spra-tainer."

Two new aerosol products, a personal deodorant and a depilatory, were introduced recently by Dorothy Gray, Ltd., New York. Both items come in blue and white packages. Three and one-half ounce container of depilatory sells for \$1.50. The deodorant features a fine quick-drying spray. It is said to be greaseless and antiseptic, and comes in two sizes—three and six ounces—which retail for \$1.00 and \$1.75, respectively.

Procter & Gamble Co., Cincinnati, is packaging its "Prell" concentrate shampoo in a clear "Bracon" plastic squeeze tube by Bradley Container Corp., Maynard, Mass. Use of the new package will be promoted with a new die-cut paperboard display carton which permits the customer to see the tube and its contents. White lettering on the tube has been designed to provide a contrast to the green-color of shampoo. Caps by Wheeling Stamping, Wheeling, W. Va.

A new point-of-sales display unit was introduced recently by FX-Lab Co., Livingston, N.J., on behalf of its "FX-3" root killer. The product is designed to prevent clogging of sewer pipes and septic tanks and cesspools by tree and shrub roots and fungus growths.

New insecticides, called "Hygeia," recently introduced by Hygeia Chemical Co., Galveston, Tex. sanitary supply jobber, is formulated by Aerosol Corp. of the South. Arlington, Tenn. Product, packaged in Continental can, is designed to control crawling insects in the Gulf states area. Cap is by Sterling Seal Co., Erie, Pa. Valves are by Aerosol Research Co., Franklin Park, Ill. Product contains McLaughlin Gormley King Co.'s "MGK 264."

"Eez," new perosol foot powder, introduced recently by Chas. Pfizer & Co., Brooklyn, N.Y., contains dichlorophene, zinc undecylenate, boric acid and salicylic acid. Packaged in a six-ounce aerosol container by Continental Can Co., New York, product is filled by John C. Stalfort & Sons, Baltimore, Valve is supplied by Precision Valve Corp., Yonkers, N.Y.

A new powder spray for removing carpet and chair stains was developed recently by R. S. Cowen Co., New York. Called "Janie," the product may be used to clean all types of fabrics, according to the manufacturer. It is applied by spraying the powder on the fabric...letting it set for five minutes, and wiping powder away with brush or cloth.

John H. Breck, Inc., Springfield, Mass., recently announced the addition of a new "break-up" button on its aerosol hair sprays. The new device is said to produce a finer and softer spray and diffuses the spray over a wider area than before. The new buttons are supplied by Precision Valve.

Availability of "AC" bleach formulation for machine dishwasing in hermetically sealed polyethylene plastic pouches was made known recently by Time Chemical Co., Chicago, The product, which contains a new bleach ingredient, is claimed to remove minor tea, coffee and similar stains from ceramic and plastic tableware. Each pouch contains eight ounces of compound.



# Did you say 7 cents?



That's right! Just a shade over 76 for the all new 16-OUNCE PLASTIC CONTAINER by PLAX.

Tough, feather-light, colorful and gentle to touch, the low-cost PLAX • PAK® containers herald a new age for plastics-and new profits for you!

Over 10 years ago Plax pioneered the "squeeze-bottle" features of the earlier polyethylenes. Now, after several years of intensive research, creative engineers and chemists at Plax have harnessed the new HIGH DENSITIES.

With this breakthrough, the "fill-andpour" concept for plastics becomes a reality . . . containers designed to function as "carrier" packages will now compete in the market place with glass bottles and metal cans.

The PLAX PAK Line is now available from stock for high-volume massmarket selling. A complete range of other sizes to be available soon . . . ideal for household liquids, cosmetics, chemicals . . . and a wide range of consumer products!

SAVE

weight cubage freight breakage carton costs handling costs warehouse space

#### PLAX CORPORATION

P. O. BOX 1019 . Hartford, Connecticut

In Canada, Plax Canada Limited, Toronto, Montreal

REGIONAL OFFICES 500 Fifth Avenue, New York 36, N. Y. 911 Busse Highway, Park Ridge, Ill.

Price in carload quantities F.O.B. mfg. plant is for natural high-density polyethylene—slightly more for standard colors and printing. Cap extra.





## NEW Erade Marks

THE following trade marks were published in recent issues of the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany each notice of opposition.

Polaris—This for antifreeze. Filed Sept. 23, 1957 by Bodie-Hoover Petroleum Corp., Chicago. Claims use since Aug. 12, 1957.

Automated—This for floor dressings and sealers. Filed Nov. 29, 1957 by Chemical Service of Baltimore, Inc., Baltimore. Claims use since Mar. 15, 1955 Mar. 15, 1955.

Mar. 15, 1955.

IG—This for general purpose detergents. Filed June 10, 1957 by Tom Daly Electric, Inc., Barberton, O. Claims use since May 15, 1957.

IN—This for general purpose detergents. Filed June 10, 1957 by Tom Daly Electric, Inc., Barberton, O. Claims, use since May 15, 1957.

Tom Daly Electric, Inc., Barberton, O. Claims use since May 15, 1957.

Onyx—This for detergents. Filed Aug. 9, 1957 by Onyx Oil & Chemical Co., Jersey City, N. J. Claims use since Nov. 12, 1935.

Revopon—This for detergent. Filed Sept. 3, 1957 by Verona Chemical Co., Norwark, N. J. Claims was a property of the control o

cat Co., Newark, N. J. Claims use since Aug. 20, 1957.

Aug. 20, 1957.

Speed-D-Burr—This for all-purpose polish. Filed Jan. 11, 1957 by Speed-D-Burr Corp., Glendale, Calif. Claims use since Sept. 10, 1953.

Perfectone—This for liquid wax polish. Filed July 25, 1957 by S. C. Johnson & Son, Inc., Racine, Wis. Claims use since Jan. 2, 1933.

Lumi-Care—This for cleaner and polish. Filed Aug. 7, 1957 by Northbrook Products, Inc., Chicago. Claims use since Oct. 1, 1956.

Acti-dione—This for fungicide. Filed Sept. 19, 1956 by Upjohn Co., Kalamazoo, Mich. Claims use since June 21, 1956.

Kalamazoo, J June 21, 1956.

Bug-Blitz—This for insecticide. Filed Aug. 14, 1957 by Martin-Senour Co., Chicago. Claims use since July 3,

Formula 40-This for weed kill-

Formula 40—This for weed killer. Filed Aug. 19, 1957 by Dow Chemical Co., Midland, Mich. Claims use since July 18, 1947.

Spaire—This for fire extinguisher. Filed Aug. 22, 1957 by Liquid Glaze, Inc., Lansing, Mich. Claims use since July 22, 1957.

Re-Muv-X—This for liquid stain remover. Filed Feb. 26, 1957 by Merle

remover. Filed Feb. 26, 1957 by Merle H. Richardson, doing business as Owen Products Co., Spencer, Ind. Claims use since Jan. 15, 1957.

Penetone—This for liquid determent.

gent and degreaser. Filed May 23, 1957 by Penetone Co., Tenafly, N. J. Claims use since Nov. 30, 1957.

Twelve Strike-This for cleaning fluid for use in bowling alleys. Filed July 1, 1957 by R & G Sales, Toledo, O. Claims use since May 20,

Prestone—This for cleaner and polish for automobiles. Filed July 24, 1957 by Union Carbide Corp., New York, Claims use since on or about Apr. 4, 1957.

Eveready-This for cleaner and polish for automobiles. Filed July 24, 1957 by Union Carbide Corp., New York. Claims use since on or about

Adair-O-Sol—This for automobile wax. Filed Aug. 14, 1957 by Chempel, Inc., Camden, N. J. Claims use since Feb. 1, 1957.

Steel-Co-Lite-This for metal cleaner and polish. Filed Aug. 16, 1957 by C C Manufacturing Co., Chicago. Claims use since on or about Feb. 5,

Lavender Mist-This for house-

Lavender Mist—This for household spray deodorant. Filed Feb. 27,
1956 by Andre L. Richard Co., New
York. Claims use since Apr. 25, 1955.
Polycide 26—This for fungicide.
Filed July 10, 1957 by Diamond Black
Leaf Co., Cleveland, now operating as
part of Diamond Alkali Co., Cleveland.
Claims use since Feb. 26, 1957.
Vanox—This for weed killer.
Filed July 24, 1957 by R. T. Vanderbilt
Co., New York. Claims use since June
24, 1957.
White Satin—This for toilet

White Satin—This for toilet soap. Filed July 12, 1956 by Angelique and Co., Wilton, Conn. Claims use since on or about Sept. 30, 1949.

Black Satin—This for toilet

Black Satin—This for toilet soap. Filed July 12, 1956 by Angelique and Co., Wilton, Conn. Claims use since on or about Sept. 30, 1949.

Red Satin—This for toilet soap. Filed July 12, 1956 by Angelique and Co., Wilton, Conn. Claims use since on or about Mar. 31, 1954.

Gold Satin—This for toilet soap. Filed July 12, 1956 by Angelique and Co., Wilton, Conn. Claims use since on or about Dec. 31, 1950.

Filed July 20,
Co., Wilton, Conn. Claims use since on or about Dec. 31, 1950.

Mysticlene—This for rug cleaner. Filed Nov. 23, 1956 by Mystic Foam Corp., Cleveland, now operating as part of Dumas Milner Corp., Jackson, Miss. Claims use since Jan. 1, 1956.

Pink Satin—This for toilet soap. Filed Dec. 17, 1956 by Angelique and Co., Wilton, Conn. Claims use since Nov. 27, 1956.

Gold Brick—This for soaps and shampoos. Filed Apr. 25, 1957 by John H. Breck, Inc., Springfield, Mass.

H. Breck, Inc., Springfield, Mass. Claims use since Apr. 5, 1957.

Slix-6—This for cleanser. Filed Jan. 16, 1957 by H. V. Smith Co., St. Paul, Minn. Claims use since Jan. 16, 1957

1957.

Under-Glo—This for cold water laundering soap. Filed Sept. 16, 1957 by Hillcrest Laboratories, Inc., Chicago. Claims use since Sept. 12, 1957.

Trisolvadiene—This for metal degreasing solvent. Filed Oct. 14, 1957 by Colonial Alloys Co., Philadelphia. Claims use since Nov. 3, 1953.

Syn-X—This for all purpose cleaner and synthetic detergent. Filed Oct. 16, 1957 by Fischer-Lang & Co.,

Frederick, Md. Claims use since Jan. 25, 1956.

Stone-Cor—This for corrugated cartons. Filed July 12, 1957 by Stone Container Corp., Chicago. Claims use since Nov. 26, 1956.

Calglow—This for brightening

Calglow—This for brightening agent for laundry and dry cleaning use. Filed Apr. 8, 1957 by Hagan Chemicals & Controls, Inc., Pittsburgh. Claims use since Feb. 25.

Phemadyn — This for liquid germicide for industrial use. Filed May 8, 1957 by United States Movidyn Corp., Chicago. Claims use since Apr. 29, 1957.

Beam—This for optical fabric brightening agent for laundry use.

Beam—This for optical fabric brightening agent for laundry use. Filed Aug. 13, 1957 by Hagan Chemicals & Controls, Inc., Pittsburgh. Claims use since June 19, 1957.

Byet—This for detergent and cleanser. Filed Feb. 19, 1957 by Incentive Sales, Inc., New York. Claims use since Jan. 30, 1957.

Swoosh—This for degreaser. Filed July 12, 1957 by Snyder Chemical Co., Akron, O. Claims use since August, 1955.

Pro-X—This for toilet soap.

Pro-X — This for toilet soap. Filed Sept. 9, 1957 by Eleanor Mast, doing business as Imperial Toiletries Co., New York. Claims use since Feb. Co., Nev 25, 1953

Shine Magic — This for liquid leather polish. Filed Aug. 22, 1957 by Schultz Shoe Co., St. Louis. Claims

by Schultz Shoe Co., St. Louis. Claims use since June 1, 1953.

Ortho-Klor — This for insecticides and pesticides. Filed Oct. 21, 1957 by California Spray-Chemical Corp., Richmond, Calif. Claims use since Nov. 8, 1948.

111 — This for shampoo. Filed Apr. 19, 1957 by I. Posner, Inc., New York. Claims use since Feb. 19, 1957. Utikleen — This for sanitation and all-purpose cleaners. Filed Sept. 4, 1957 by Utility Chemical Co., Paterson, N. J. Claims use since Aug. 26, 1952.

Sta-Col — This for hair sham-

Sta-Col - This for hair sham-Sta-Col — This for hair shampoo. Filed Sept. 10, 1957 by Columbia Beauty and Barber Supply Co., doing business as State and Columbia Beauty and Barbers Supply Co., Columbia, S. C. Claims use since June, 1945.

Dividend—This for soap. Filed Sept. 11, 1957.

Wa-So — This for cleaner for floors and walls. Filed Sept. 23, 1957

floors and walls. Filed Sept. 23, 1957 by F. W. Hoffman & Co., Philadelphia. Claims use since 1945.

Rotax-This for cleaning, cleansing and detergent compound. Filed Oct. 17, 1957 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Feb. 28, 1957.

#### R. C. Can Acquisition

R. C. Can Co., St. Louis, recently announced the acquisition of National Paper Can & Tube Co., Milwaukee. R. C. Can manufactures fibre cans and tubes. National Paper makes loose-end cans and spiral-wound cans and tubes. It will be operated as a division of R. C. Can.



# A PACKAGING TEAM NEEDS

The package can determine the success of a product. And so important has the packaging factor become that more and more companies are making packaging decisions through *teamwork*. Specialists from various departments offer their know-how and experience. But to make a packaging team complete, it needs an outside viewpoint. It needs an Anchor Man.

The Anchor Man knows glass packaging. He's helped solve hundreds of tough packaging problems. Through this wide experience, he can help you solve yours, too.

He offers a complete line of Anchorglass® containers—amber, crystal and green—in all standard sizes and styles. The quality of these containers is safeguarded by hundreds of daily checks, tests



# AN ANCHOR MAN!

and controls. You get the same high quality standards in the complete line of Anchor\* metal and molded closures. And you get container-closure combinations that are best for you in every way.

Contact your Anchor Man. We know you'll want him on your team, too. Anchor Hocking Glass Corporation, Lancaster, Ohio. Branch offices in all principal cities.

## ANCHOR HOCKING

Glass Containers and Closures

Most economical metal container ever made for your product... or family of products!



**Continental** 

# CONE TOP CANS

A prestige look for your entire line – at lower cost!

Whatever your product, or line of products, from household cleaners to automobile specialties, they can have a "prestige look" at lower cost in Continental Cone Top cans. Handsomely lithographed by Continental craftsmen, Continental Cone Tops provide *extra* sales power, *extra* brand identification.

Continental makes Cone Tops in the widest range of sizes, from 4 ounces to 32 ounces, to accommodate any product you make. You get faster delivery, too, from Continental shipping points all across the United States. Give *your* product or your whole line the benefits of lower cost Cone Top cans. Call today.





Eastern Division: 100 East 42nd Street, New York 17 Central Division: 135 South La Salle Street, Chicago 3 Pacific Division: Russ Building, San Francisco 4 Canadian Division: 5595 Pare Street, Montreal, Que.

## PRESSURE PACKAGING

#### Powr-Pak and Conn. Chemical Merge

Powr-Pak, Inc., and Connecticut Chemical Research Corp., both Bridgeport, Conn., contract aerosol loaders, jointly announced late last month that they merged into one organization to be known as Powr-Pak-ConnChem, Inc. Edward F. Helfer, former president of Powr-Pak, heads the new firm, said to be the largest in the aerosol field. Mr. Helfer was one of the original founders of Connecticut Chemical, and had a hand in developing the first low pressure aerosol in 1947. Executive vicepresident of the newly formed organization is Jack Schenberg, former vice-president of Connecticut Chemical and also one of its cofounders. Mr. Schenberg had been in control of that firm's operations since last April, when A. O. Samuels resigned.

Man power, know-how, and equipment of both companies is pooled and united under one roof at 145 Howard Avenue. The one story unit, purchased by Powr-Pak early this year, opened officially June 6 under the new aegis. Its 90,000 square feet of floor space hold seven major production lines having a capacity of more than

200,000 units per shift. Warehouse facilities can hold five million



Edward F. Helfer

empty containers and one million filled aerosol units. Three separate and self contained divisions operate at the new plant: one division pressure packages household chemical, automotive and other specialties; another handles medicinals, cosmetics, and toiletries; and a third loads food aerosols. The food aerosol division is claimed to be the only one of its kind in the East.

The executive line-up of the new corporation will be as follows:

Milton Fowkes, vice-president and director of research; Marvin Steinbock, vice-president and director of manufacturing; Charles O. Rader, vice-president and sales manager; Edward Lasner, vice-president of contract sales; and Joseph Zamata, assistant to the president.

All officers held executive positions with Connecticut Chemical immediately prior to their current appointments, except Mr. Zamata, who had joined Powr-Pak after having served Connecticut Chemical as a purchasing agent. Mr. Rader was with Bridgeport Brass Co, before he went with Connecticut.

#### Aerosol Golf Outing Set

The annual aerosol golf outing has been set for July 15. It will be held at Wygagyl Country Club, New Rochelle, N. Y. Details are available from Denton Anderson, Crown Cork & Seal Co., 10 Columbus Circle, New York 19.

#### **Carbide Names Propellants**

"Ucon" is the brand name adopted by Union Carbide Chemicals Co., New York, for its line of fluorocarbon aerosol propellants. The choice was announced by John R. Hulten, manager of fluorocarbon sales, at the May meeting of the Chemical Specialties Manufacturers Association in Cincinnati.

Carbide's line of fluorinated hydrocarbon propellants will be coded 11, 12, 22, 113, and 114, in accordance with prevailing indus-







Jack Schenberg



JUNE, 1958

try practice and parallel to corresponding products by other manufacturers. "Ucon" propellants will be made at a plant located in Institute, W. Va., which is expected to be on stream in the fall of this year. Design capacity of the new unit is 50 million pounds of fluorocarbons a year. Carbide has set up an aerosol technical service laboratory in Westchester County, N. Y., which will provide service to loaders and conduct application research.

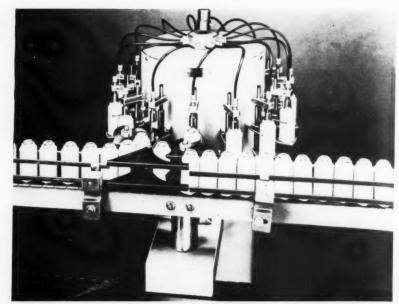
#### **New Alpha Gassing Unit**

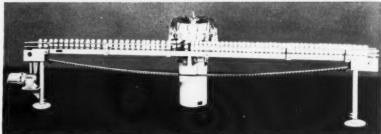
A new machine for charging aerosol containers with nitrogen or other compressed gasses was introduced recently by Alpha Engineering Works, Inc., Mt. Prospect, Ill. The new unit may be used for packages containing liquid or semiliquid chemical specialties and related items. Tradenamed "220 Roto-Gas," the machine is capable of gassing up to 120 cans per minute. The entire feed cycle is automatic and the rotary feed head permits handling of a large volume of cans in a small area. Conveyors are supplied in whatever length required.

#### **New Wheaton Brochure**

A new eight-page, full color brochure describing its line of plastic-coated bottles for aerosol packaging was published recently by Wheaton Plastics Co., Millville, N.J. The new booklet features a special section, entitled "Aerosol... What It Is and How It Works," which provides complete data about the aerosol package, including its components, methods of filling, types of spray and related information.

Also included in the brochure is a section devoted to Wheaton's plastic coated aerosols molded for private label packaging. Many of the models are illustrated in color. The booklet also contains specifications of the bottles and is further illustrated with charts and graphs. In addition, information on the company's special coatings for non-aerosol bottles and jars is given.





Close-up, top, of new machine for charging aerosol containers with nitrogen and other propellants, announced recently by Alpha Engineering Works, Mt. Prospect, Ill. Lower photograph is overall view of the unit which can gas up to 120 cans per minute.

Copies of the brochure may be obtained from Wheaton Plastics Co., Millville, N.J.

The  $81/2 \times 11$  inch booklet was produced under the direction of A. R. Marks, aerosol sales manager, who checked the photographs used to illustrate the booklet.

#### CSMA Aerosol Symposium

Five papers on food aerosols comprised a symposium on pressurized foods presented by the Chemical Specialties Manufacturers Association at the annual meeting of the Institute of Food Technologists held at the Palmer House, Chicago, May 25-28. CSMA's aerosol division also sponsored an aerosol information center at the meeting.

The papers presented include: "The Background and History of the Presurized Food Industry," by W. E. Graham, Clayton Corp., St. Louis; "Technical Fac-

tors in Packaging of Pressurized Food," by Dr. D. H. Johns, American Can Co., Barrington, Ill.; "Special Problems in Pressurized Food Packaging-Heat Preservation of Pressurized Foods," by E. D. Giggard, Continental Can Co., Chicago; "How a Food Manufacturer Can Institute a Pressurized Food Program," by R. C. Webster, Ohio Chemical and Surgical Equipment Co., Madison, Wis.: and "The Food Manufacturer Looks at the Potential Pressurized Food Market," by Dr. William Martin, Heublein, Inc., Menlo Park, Calif.

#### Chlorothene Price Cut

A one cent per pound reduction in the price of "Chlorothene" (1,1,1-trichloroethane) was announced by Dow Chemical Co., Midland, Mich., late last month. The material now costs 13.75 cents per pound in tank car quantities, freight allowed.

The <u>First</u>
Successful
Aerosol Wax
uses...



# Micro-Mist\* Valves

pledge

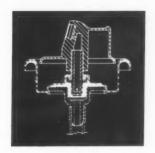
Johnson's new "PLEDGE" is a shining example of the dispensing ability of the Risdon Micro-Mist valve. As housewives are delightedly discovering, a gentle push on the actuator sends out a wide, soft cloud of emulsified wax which evenly coats the surface. A light wiping produces a high shine.

This Johnson formulation requires a threephase dispensing system. The Micro-Mist valve (a Risdon 5210 valve topped with the patented Micro-Mist actuator) plays a vital part in this system. It mechanically breaks the solid stream of liquid into a fine, atomized mist as it leaves the spray orifice.

For 2-phase aerosols this valve is supplied either with standard actuators or with Micro-Mist actuators when a super-fine, wider, drier spray is desired. In fact, this basic Risdon valve has proven ideal for almost the entire range of aerosols including water-base formulations and ultra-low pressure products. It is being used in metal, glass and plastic containers for vertical and horizontal sprays and for foam dispensing.

#### THE RISDON MANUFACTURING COMPANY Valve Division, Naugatuck, Conn.

There's a Risdon Valve for Virtually Any Pressurized Product Packaged in Glass, Metal or Plastic.

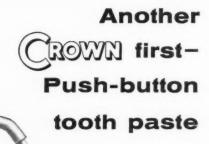






SEND FOR THESE FREE BOOKLETS -

They give you complete illustrated information on Risdon valves and actuators for metal, glass and plastic packaged aerosols.



Whole new sales potentials open up... static sales curves take an upward turn... when aerosol packaging gets in the act. Now, to its growing list of Spra-Tainer users, Crown has added the pressure packaging of toothpaste.

Crown, who pioneered the aerosol can with Spra-Tainers, has continued to expand production facilities in the aerosol field... offers the most complete line of aerosol cans available in both the seamless and fabricated styles.

If you want to capitalize on the profit potential of the push-button age, call the man from Crown and consult with him on methods of aerosol packaging. Crown Cork & Seal Company, Inc., Can Division, 9300 Ashton Road, Philadelphia 36, Pa.

for closures for containers for machinery



CROWN CORK & SEAL COMPANY, INC.

In addition to being a widely used solvent, "Chlorothene" finds use as a vapor depressant in aerosols, as a spot remover, and in metal cleaning.

#### Chivvis Joins Carbide

Appointment of Arthur Beecher Chivvis to the fluorocarbon sales staff of Union Carbide Chemicals Co., New, York, was announced recently by John R. Hulten, fluorocarbons sales manager. Mr. Chivvis, who will provide sales and technical service to the aerosol field, will headquarter in New York. For the past eight

New aerosol perfume dispenser by Risdon Manufacturing Co., Naugatuck, Conn., called "Mini-Mist," is about the same size as a lipstick case and is refillable. Case shown in top photo features a modern geometrical design of diamond-shaped gold lines etched into a silver background. The cap, not shown, has a silver finish. The cartridge in use in this case is aluminum while the actuator has a highly-polished gold finish. The newly-patented aerosol valve is made of nylon and rubber. Bottom photo shows full line of new dispensers, which come in silver, gold or black metal finishes and circles, floral brocades and stylized symbols.







New fluorocarbons aerosol propellant team of Union Carbide includes: John R. Hulten, manager, fluorocarbon sales (seated); Arthur B. Chivvis (center) of the fluorocarbons sales staff, and Elbert Husted, sales manager, fluorocarbon propellants.

years, he has been assistant to the sales manager of the aerosol division of Bridgeport Brass Co., Bridgeport, Conn. In that post he had been in charge of contract filling sales, export sales and sales to U. S. military commissaries and post exchanges. He also directed activities of salesmen, food brokers, and manufacturer's representatives.

#### **Automatic Pressure Tester**

Robins Engineering Co., North Haven, Conn., recently published a four-page illustrated folder describing its automatic aerosol pressure tester and venter. The new device automatically pressure tests each container, vents gas, fills dip tube to desired level without discharging any product, according to the manufacturer. Faulty containers are automatically rejected. The Robins tester is said to handle up to 60 aerosol containers a minute.

#### **Expands Aerosol Production**

Sorbel Co., Richmond Hill, N. Y. has expanded its private filling capacity with the installation of new automatic and semi-automatic equipment at its Richmond Hill plant, 108-110 Liberty Ave., Richmond Hill 19, N. Y. In addition to filling jars, bottles, collapsible tubes and metal cans, the firm manufactures cosmetic auto-

motive and sanitary chemical specialties, under private label.

#### Webster in New Post

Robert C. Webster has been appointed director of the newlycreated customer service laboratory of Ohio Chemical & Surgical Equipment Co., Madison, Wis., it was announced recently. The function of the laboratory will be to conduct research on pressurized packaging, using nitrous oxide, nitrogen and carbon dioxide as propellants. Mr. Webster previously had been manager of the pressurized food division of Western Filling Corp., Los Angeles. Before that, he was associated with Continental Can Co., Chicago, where he was engaged in the development of pressurized food containers.

Robert C. Webster





#### **More Nitrogen Facilities**

Linde Co. Division of Union Carbide Corp., New York, has put into operation two new nitrogen storing units, one at Houston and one at Tulsa, it was announced recently.

The storage installation at Houston has a capacity exceeding one million cubic feet, while the new Tulsa unit has a slightly lower capacity. Both units will be filled from Linde's nitrogen producing plant in Houston. The gas is stored in liquid form, which is economical since one quart of liquid nitrogen equals almost 800 quarts of gaseous nitrogen.

#### **CSMA** Meets

(From Page 93)

Fundamental problems which must be controlled before the hazards of packaging any food item may be overcome were discussed in a paper "Microbiological Aspects of Pressurized Foods", by G. L. Hays and D. W. Riester of American Can-Co., Maywood, Ill. The authors point out that "the process requirements of pressurized foods will be essentially the same as for comparable foods packaged in hermetically sealed containers under vacuum." They further state: "High-acid or high-soluble solids foods should be gassed hot in order to prevent spoilage in these pressurized foods. Unless low-acid, low-solids foods intended for non-refrigerated distribution can be gassed before being processed, some modification of the aseptic canning technique will probably be required to prevent spoilage in these foods."

Two features, a symposium on "Nitrogen-Containing Surfactants" and a paper on "Cationic Nitrogen Containing Surfactants", by Paul L. DuBrow of Armour & Co., Chicago, highlighted the first session of the Soap, Detergents and Sanitary Chemical Products Division, May 20.

First panelist, Theodore H. Kritchevsky, Stepan Chemical Co., Chicago, spoke on "Alkylolamides." He said the unique properties of these compounds have resulted in their widespread and growing use in many industries as foam stabilizers, detergents, emulsifiers, textile finishing agents, thickeners, opacifiers, etc. Although the total quantity of alkylolamides of all types used today is not known exactly, a reasonable estimate is approximately 25 million pounds. According to Mr. Kritchevsky, this substantial usage attests to the importance of alkylolamides as a class of nonionic surfactants.

Discussing "Sulfonated-Amide Anionic Surfactants" in a paper of that title by C. E. Stevens and J. M. Cloney of Antara Chemicals Division of General Aniline & Film Corp., New York, Mr. Stevens pointed out these products have experienced a steady, healthy increase over many years. Although they have not experienced the rapid upsurge of either the alkanol-amides or the nonionics, the steady growth of the sulfonated amides is attributed to their increased use in longestablished applications, as well as to new developments in industrial and household markets. They are more like soap than any other surfactant, yet have none of the disadvantages of soap.

The problems of labeling hazardous products is becoming a major hazard for industry today, H. W. Hamilton, CSMA secretary said in his report May 21. Several states, he said, have introduced hazardous substance labeling legislation. The chemical industry will be harassed by a serious problem, he added, if many states pass laws written around some condition that may exist locally, or some incident that incites popular political attention.

"The CSMA," Mr. Hamilton continued, "recognized fully the problems that are arising in this present pressure on precautionary labeling. Some of it is deserved and there does probably exist much room for improvement on many labels where hazards exist in use."

A compilation of all laws and regulations on hazardous substance labeling that are known, the first of its kind ever published, will be made available shortly by CSMA, Mr. Hamilton reported.

Louis Ware, chairman of International Minerals & Chemical Corp., Chicago, luncheon speaker May 21, in an address entitled "Too Much Is Not Too Much", pointed out that "fully supplied markets are normal to us, not abnormal, and we must learn to live and operate profitably in such markets."

Instruments for wide range of applications in studying and testing aerosol products were described, discussed and illustrated in a paper "Instrumentation for the Aerosol Industry" by William B. Leighton of Union Carbide Chemicals Co., New York. This paper will appear in full in the August issue of SOAP. Mr. Leighton spoke at the joint Aerosol-Insecticide Division meeting May 21.

On the same program John D. Conner, CSMA general counsel, revealed that "there is considerable activity in the field of regulatory requirements for labeling insecticides." In the paper, written by Mr. Conner's associate, Robert T. L. Ackerly, it was pointed out that "the Department of Agriculture is studying a new Revision of Interpretation 18 to expand the list of chemicals for which labels are suggested by the Department." The full text of the article will appear in a forthcoming issue of SOAP.

Mr. Conner was followed by Philip L. Hauser, National Steel-wares Division, Root-Lowell Manufacturing Co., Chicago, Ill., whose subject was "Sprayers Can Help Your Insecticide Business." According to Mr. Hauser sprayers and aerosols do not directly compete in a highly diversified market which has room for both modes of dispensing.

Stressing the importance of correct application to sales of any insecticide Mr. Hauser pointed out that this factor is ensured by the use of a sprayer that will: break the insecticide into the correct droplet size; dispense the insecticide in sufficient volume; and dispense with enough force to carry it to the in-

# A erocol bouquets

that have proved their effectiveness in the production of industrial and consumer products

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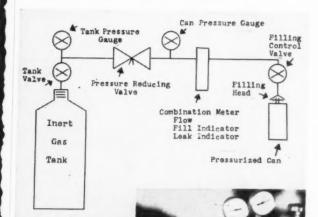
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Engineered to provide an efficiently integrated, easy one-two-three step operation, with a production rate of approximately 10 cans per minute.

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sects to be killed. This is true regardless of whether the material is intended for space or residual application. Applicators failing in any of these three points do a disservice to the product.

Although 64 per cent of users reported reading all label instructions on labels in a survey conducted by CSMA's Insecticide Scientific Committee, answers to other questions contained in the survey indicated that this figure is too high. The survey results were contained in a paper, "Do People Read Labels of Household Insecticides" by A. C. Miller, Arnold Mallis and W. C. Easterlin of Gulf Research & Development Co., Pittsburgh. The full paper will appear in the July issue of Soap & Chemical Specialties.

"There is not sufficient evidence, at this time, to state whether or not hair sprays as a whole may be included in (a) group of potentially hazardous inhalants," said Dr. Morris Shelanski of Industrial Biology Research and Testing Laboratories, Philadelphia, Dr. Shelanki's paper carried the title, "PVP -A Medical Review of its History as an Air Contaminant in Industry." In the paper Dr. Shelanski stressed the fact that workers in two plants at which PVP has been produced for eight and two years, respectively, have been exposed to "moderately heavy dust conditions" and have not shown any change in the lung evident by X-ray which is similar to the changes described by the authors of the article in the New England Journal of Medicine. The full text of this paper will appear in the July issue of Soap & Chemical Specialties.

An increase in production of brake fluid from 9.6 million gallons in 1956 to 10.5 million gallons in 1957 was reported in the survey of the Automotive Division. At the same session, May 21, the division heard that production of cleaners and sealers for use in automobile cooling systems dropped off slightly last year. The actual total of 4,043,-953 consumer sized packages turned out last year was down about 13 per

cent from the 1956 production of 4,679,024 units.

The question, "Is Soap Outdated?", the title of a paper by A. K. Prince and W. R. Merriman of Dow Chemical Co., Midland Mich., was answered with an "unqualified 'no' " by the authors. They say that the deficiency of soap in hard water can be overcome by combining the tetrasodium salt of ethylenediaminetetraacetic acid with soap to soften water. At the new low prices for this type of chelating agent, it is also economically possible to achieve a satisfactory formulation based on soap which will compete with the present commercial heavy-duty synthetic detergents in water up to seven grains hard.

#### Carbon Tet. Case

(From Page 99)

with others, merely as a guide to a determination of the adequacy of the warning furnished by appellant. For this purpose we have the view that they were properly allowed in evidence.

Appellant seeks reversal on the further ground that the appellee was permitted to place in evidence a portion of the regulation promulgated by the Secretary of Agriculture pursuant to the Federal Insecticide Act, the regulation being found in 7 Code of Federal Regulations. Section 362.116, et seq. With regard to this proposition we have the view that the Federal Insecticide Act in and of itself had little bearing on the issues presented to the trial court. That act deals with the registration, testing, labeling and distribution of insecticides. It is clear from this record that pure carbon tetrachloride is not used as an insecticide. The regulations promulgated pursuant to the federal act do prescribe the label for a commodity consisting of carbon tetrachloride of a strength of ten percent and above but the testimony reveals clearly that when used as an insecticide the percentage of carbon tetrachloride does not exceed twenty percent. Nevertheless, on cross examination of several witnesses the appellant over objection of the appellee was permitted to bring into evidence before the jury by reference to The Federal Register provisions of the federal regulations prescribing a form of label considered to be a minimum warning on mixtures of carbon tetrachloride of ten percent and above. Thereafter the court permitted the appellee to introduce into evidence a part of the same regulation defining economic poisons and setting out the minimum requirements for labeling thereof. As pointed out herein we think that the provisions of the federal regulation have little bearing on the instant case. Certainly the labeling provisions

were at most only factually persuasive as evidence to go to the jury. They were not controlling as an absolute statutory standard of care. As a matter of fact the appellant had not registered its commodity with the United States Department of Agriculture. Under these circumstances we are led to the view that having introduced the subject by its own examination of the witnesses, the appellant is not in a position to complain that the appellee was permitted to offer evidence of a part of the same regulation to counterbalance the evidence offered by appellant itself.

In regard to the contention that the regulations of the Commissioner of Agriculture of Florida, promulgated under Chapter 487, Florida Statutes, should have been permitted in evidence, it is sufficient to point out that the Florida regulations were promulgated subsequent to the occurrence in litigation in the instant case. We think the court properly excluded the regulations which were not in effect when this transaction took place even if they otherwise would have had a place in the evidence.

We have not overlooked the argument for reversal grounded on alleged errors in the instructions. While in a case as complex as this it is always possible that the trial judge has committed some technical error we fail to find from an examination of the instruction as a whole either that substantial error was committed or that the court erroneously advised the jury on the law to the harm

of the appellant.

On the assertion that the amount of the verdict is excessive, a careful examination of the record as to the background and business potentials of the deceased as well as his earning capacity and life expectancy leads us to the conclusion that the jury did not exceed the bounds of reason in arriving at the verdict which it rendered. Sitting as jurors we, as individuals, might have arrived at a different verdict. However, there is no evidence here present that this jury, working under the guidance of an experienced trial judge, exceeded the bounds of propriety or was persuaded unduly by passion, sympathy or prejudice. We feel that the verdict is sufficiently within reason and therefore we would not be justified in setting it aside or ordering a reduction without being guilty of judicial encroachment upon the jury function.

Many bours have been spent in a careful examination of the record, a study of the authorities cited, as well as a cautious analysis of the splendid briefs submitted by able counsel for both parties. A thorough consideration of the case leads us to the conclusion that the trial was conducted in a fashion consonant with the requirements of the law and in the ultimate the solution to the problem was properly deposited with the jury. We see no reason to disturb the judgment which is-

AFFIRMED

THOMAS, Acting Chief Justice, DREW and THORNAL, JJ., concur ROBERTS, J., dissents



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High-speed filling techniques keep supplies of your packaged products ahead of demand.

**B**ecause consumers are increasingly concerned with convenience and ease-of-use, aerosol and pressurized packaging is boosting sales for hundreds of products... from insecticides to hair lacquers... from perfumes to mothproofers... from shampoos to hand lotions... from deodorants to shaving lathers.

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We'll do the research in our modern laboratory at no expense or obligation to you.

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**Book Reviews** 

Production Clinic

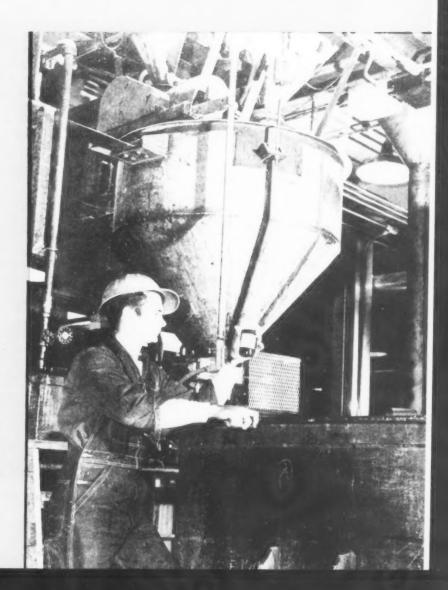
Soap Plant Observer

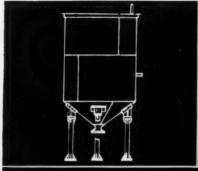
**Products and Processes** 

**New Patents** 

**Bulletins and Equipment** 

Sample for analysis is taken after phase nine in automatic soap mixing process at Borger, Tex., plant of Phillips Chemical Co. Automatic proportioning of ingredients in aqueous soap solution is accomplished by electronic control system developed by Baldwin-Lima-Hamilton Corp., Waltham, Mass. See details of the process on page 139.

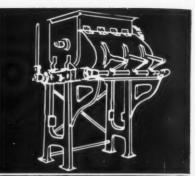




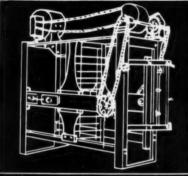
KETTLES



CRITCHER



AMALGAMATORS



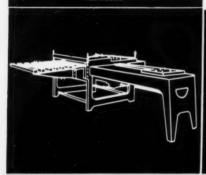
SLABBERS

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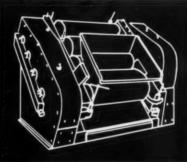
Whether you require one piece of machinery, or equipment for an entire soapery, Houchin can supply your every need.

Such a breadth of experience assures you of machines designed not only to perform a single process, superlatively well — but also of machines which, coordinate closely with the preceding and following processes.

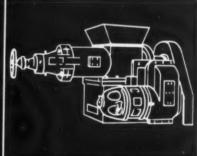
It will pay you to write us and get information about the complete Houchin line of soap machines.



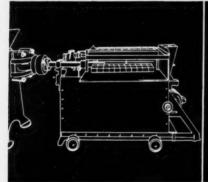
LAUNDRY SOAP CUTTERS



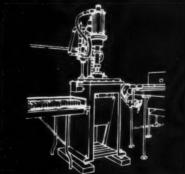
MILLS WITH GRANITE OR CHILLED IRON ROLLS



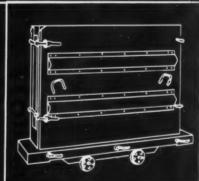
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TOILET SOAP CUTTERS



PRESSES-FOOT OR AIR OPERATED



SOAP FRAMES

Manufacturers Of Soap Making Machinery For Over A Century.

HOUCHIN MACHINERY CO., INC. HAWTHORNE, NEW JERSEY, U.S.A.

# Production SECTION

# Automatic Soap Batching

UTOMATIC proportioning of the ingredients incorporated in an aqueous soap solution is accomplished by an electronic control system developed by Baldwin-Lima-Hamilton Corp., Waltham 54, Mass. Based on the use of B-L-H "SR-4" load cells and allied control equipment, the system is currently in use to insure uniformity of a soap/ water solution used in the manufacture of synthetic rubber at the Borger, Tex., plant of Phillips Chemical Co. The reaction that produces the rubber occurs in an emulsion formed by agitating two monomers in a soap in water solution. Obviously the uniformity of this solution is essential to the final product.

The batching operation in-

volves a sequence of phases, all taking place in one mixing tank supported by four "SR-4" load cells, which constitute the heart of the system. A batch controller contained in a console located 50 feet from the tank regulates and records the operation. A continuous strip recorder in the console charts the weights and time periods involved, thus creating a permanent record on each mix. The controller automatically resets itself on zero prior to each addition of a new ingredient. Any potential error accumulation is thus eliminated.

The first phase of the process is manual: the caustic solution is conveyed into the mixing tank by operation of a hand valve on the caustic measuring tank. Next, water and steam are automatically

released into the tank and the addition is weighed. Addition of resin acid soap is the third phase of the process. As the soap is added, the controller starts the tank agitator and operates it until almost all of the soap has been introduced into the mixture. Then the agitator is stopped, while the final increment of soap is added at a slower rate to insure precise proportioning. Next, the mixture is agitated for an automatically timed specific period. In the fifth phase the system adds water at normal ambient temperature. While the water flows into the mixing vessel the agitator continues to operate. When all the water is in the tank the stirring mechanism stops to permit a second accurate weighing. In phases six and seven additional chemicals are

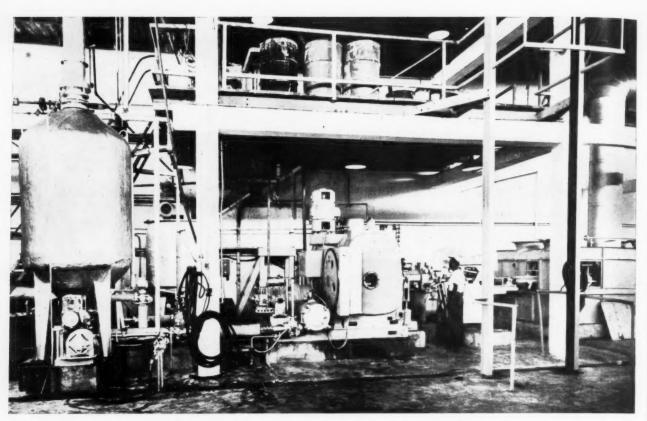
Motor valve of final control element for liquid soap mixing, below.

Control panel at Philrich branch of Phillips Chemical's Borger, Tex., plant. At upper left is continuous strip recorder which charts the results of each operational cycle. Panel at right contains both



automatic and manual controls for each stage in process. Each ingredient can be introduced at any point in the process sequence by setting sequence control on its respective control panel. Further, the amount of each ingredient can be varied at will by pre-setting the desired weight on respective digital weight control digit.





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PANAMA R DE P Hebrero 12 de 1945

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Muy seffores nuestros

Nos es mus placentero informarles que la instalación de la Planta de elaboración continua de jabonee, incluvendo la compresora refrigerante SAIZ 2-C, está trabajando hace ya sigunas semansa y produciendo un jabón de lavar de una calidad innejorable.

con 52% de acidos grasos con base en una media de abba, aceta de con y una caridas acon base en una media de abba, aceta de coon y una caridada con base en una media de abba, aceta de coon y una caridada per persado y envuelto, teritendo muy buena apariencia, a decir, de textura dura-elástica, con superficie muy brillante, produce mucho más espusa que un jabón fabricado por métodos convencionales, y benos notario que el rendiaciento del nuevo jabón en el uso fiderácio es mayor.

cabo con su maquanaría, mos hemos dado cuenta de las grandes posibilidades que ella tiene y que mediante variaciones de presiones, velocidades y temperaturas se pueden obtener jabones de calidades my distintar.

Oportunamente les informaremos sobre la producción de otros jabones con su maguinaria. Para terminar, deseanos (elicitaries por su idea y la magnifica ejecución de la sisma en la maguinaria SAIX y sus accesorios.

> De ustedes muy stentos y Ss., Ss., CIA. BANACHA DE ACBITES, S. A.

Priesto Roref Gerente General.

ER/20.ACCITES, MANTECA Y MARGARINA . JABONES Y DETERGENTE

Photograph of a "SAIX-PISONI" Automatic type plant for the continuous production of pladded soap.

Range of applications:

Plodded soaps from either low or high titer fats.
 Pure soaps, 62% fatty acids, retaining natural moisture (28-30%).
 Soaps containing up to 40% moisture.
 Soaps filled with silicate or other builders, their fatty acids contents lowered to 35% and all natural moisture retained.
 All kinds of opaque concentrated soaps, either pure or filled, and based on low or high titer fats.
 Concentrated translucid soaps without any addition of glycerine, alcohol or other chemicals.
 Translucid or opaque toilet soaps.

Special features and savings:

Absolutely no changes in fatty acids and moisture percentages between the hot liquid soap fed into the plant and the resulting extruded bar.
 Soaps crystallized up to 100% in "Beta Phase", consequently of excellent lathering characteristics.
 Little cooling water required at temperatures between 15°C. and 30°C.
 One man can operate the plant.
 Maximum economy in space.
 Soaps can be cut, stamped and packaged without scraps.
 Extremely easy to operate: minimum maintenance required.
 No distortion or twisting of soap billets during storage.
 Automatic perfuming device.
 100% savings on steam, 50% on cooling water, 50% on electrical power, 70% on labor.

**Production capacities:** 

1/10, 1/4, 1/2, 1, 2, 3 tons per hour and more.

54 "SAIX-PISONI" PLANTS MANUFACTURED IN THREE YEARS

MECCANICHE MODERNE are also makers of: continuous plants for toilet soaps; continuous sulfonating plants; spraydriers for the production of soap and detergent powders in bead form.

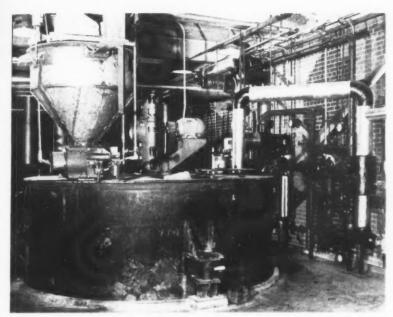


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Automatic scap mixing is conducted entirely in this large tank in Borger, Tex., plant of Phillips Chemical Co. At top center of tank is motor drive for agitator. Storage hopper for chemicals is at left of drive. Intake pipes for water and steam enter top of tank at two locations on right. Tank's supports with B-L-H SR-4 load cells in place are visible at lower center and extreme left of picture.

introduced into a weigh hopper. The next phase starts the agitator, shortly thereafter opens the weigh hopper to release the chemicals into the mixing tank, and arrests the agitator after completion of a given cycle.

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At phase nine the sequence controller locks automatically, the operator draws a sample, and all equipment remains shut down until the laboratory returns the report. If supplementary agitation or corrections in the solution are required these are accomplished in phase ten by manual activation of the mixer or by manual additions. In the last stage of the process a pump transfers the soap batch to one of two storage tanks. To start the pump the operator throws a switch on the control panel.

In addition to controlling the mixing operation in the stages outlined above the system provides certain safeguards against faulty composition. If plugged lines or an inadequate supply delays or cuts addition of an ingredient, the sequence controller lights a red

light, stops the process until the

fault is corrected. If a faulty valve should release an excessive amount of any one of the components the system will also shut down and give the alarm.

An accuracy of plus or minus one tenth of one per cent is claimed for the system. At the end of each phase a deviation recorder tells the operator whether the ingredient added was over or under weight. In phase ten he can correct the deviations by placing the sequence controller in manual operation and by adding the necessary ingredients. Finally, if the soap batch exceeds the capacity of the storage tank, controls prevent the starting of the transfer pump.

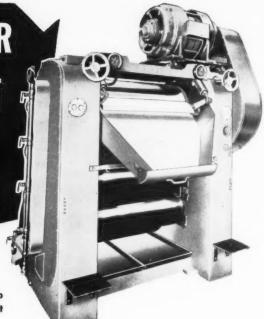
By minimizing the opportuntity for both human and mechanical error the automatic soap batching system eliminates much time consuming work previously required to detect and compensate for such errors. A ten per cent time saving is claimed for the installa-

(Turn to Page 191)



Close-up of B-L-H SR-4 load cell shows arrangement by which whole mixing tank is supported. Load cell is cylindrical member from which electric conduit leads.

# THIS MACHINE IN YOUR COMPETITOR'S PLANT — can make things tough for you



Lehmann Model 651-SV Sight-O-Matic Five-Roll Soap Mill—to provide three-fold gauge control over: product milling, take-off efficiency and temperature.

The LEHMANN 651-SV FIVE-ROLL SOAP MILL with SIGHT-O-MATIC\* CONTROL definitely improves quality control, increases output, and reduces costs wherever it is installed. If your competitor has this equipment, and you do not, you are, in effect, yielding him a strong competitive advantage.

Current buyers' markets are becoming more selective every day. The manufacturer who uses less than the best production equipment can be sure of one thing—the money he "saves" by not buying modern machinery he will lose many times over in higher operating costs and reduced business.

We suggest that you send for complete information regarding Lehmann Soap Finishing Machines—learn what savings in time and money can be yours by installing Lehmann units in your plant to bring your operating costs down to rock bottom.

Lehmann's extensive line of soap processing equipment consists of: Roller Mills • Amalgamators • Preliminary Plodders • Finishing Plodders—each manufactured in a full range of sizes.













Lehmann would be pleased to offer milling test service on samples of your formulations, without obligation. Lehmann Certified Factory Reconditioning Service will return your present equipment to highest operating efficiency.

Send for further information on any or all of the machines mentioned here.

\*Reg. U. S. Pat. Office. Sight-O-Matic Controls and other specialty devices can be furnished as optional equipment.



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# Book Reviews

#### **Surface Activity Congress Proceedings**

PROCEEDINGS of the Second International Congress of Surface Activity, published 1957 by Butterworths Scientific Publications, London, England, and February 1958 by Academic Press, Inc., New York. Four volumes, cloth bound, subscription price \$50.00.

The proceedings reported in these volumes took place at the Senate House, London University, April 8-12, 1957. The papers contained in each of the four volumes are subdivided into sections. Discussions which followed individual presentations are appended at the end of each section.

Volume I, Gas/Liquid and Liquid/Liquid Interface, pp. 521, price \$15.00. The eight sections making up this volume deal with the following subjects: insoluble films; soluble films; foams, evaporation retardation; monolayers liquid/liquid interface; solubilization and micelles; emulsions; and general phenomena.

Volume II, Solid/Gas Interface, pp. 348, price \$12.60. This volume is divided into two sections; physical adsorption and chemisorptions.

Volume III. Electrical Phenomena and Solid/Liquid Interface, pp. 621, price \$16.80. The second part of S/L interface comprises the following sections: contact angles, spreading and wetting; flotation; adhesion; adsorption; lubrication; and nucleation.

Volume IV, Solid/Liquid Interface (Washings, etc.) and Gell/Water Interface, pp. 352, price \$12.60. The first section of the first part deals with washing. The following subjects are treated: "The Rate of Wetting of Textiles by Detergents Systems", K. Durham and M. Camp, Unilever Ltd., Port Sunlight. This paper describes an investigation of the wetting of cotton by detergent solutions by means of

an apparatus especially designed for the purpose.

Some New Observations on the Action of NaCMC in Washing Baths", by K. J. Neiuwenhuis and K. H. Tan, Delft, Netherlands, reviews the literature and describes new washing experiments. The authors conclude that no valid proof for the adsorption of sodium carboxymethylcellulose on normal types of soil has been given as yet. On the other hand the hypothesis that at least part of the many constituents of commercial NaCMC is adsorbed, either reversibly or irreversibly, on washed and bleached cotton has not yet been disproved. New measurements taken under normal washing conditions are re-

A paper by C. Kortland and P. L. Kooijman, Amsterdam, Netherlands, reports on a systematic investigation of the "Solubility of Binary and Ternary Systems of Synthetic Detergents." Particularly good solubility has been observed in certain mixtures of alkyl arvl sulfonates and alkyl sulfates, and in combinations of alkyl aryl sulfonates and nonionic detergents. A rapid and reliable method is described for determining the clear point of aqueous detergent solutions. This shows typical differences which exist between certain types regarding their respective sensitivity to inorganic salts and supplies quantitative information on the clear points of some binary and ternary mixtures.

"The Evaluation of Detergents with Special Reference to Laundering", by R. E. Wagg, British Launderers' Research Association, London, reviews techniques for the laboratory and field testing of laundry detergents. By the same author is a report on "Some Observations on the Relationship Between Dirt Removal and Fibre and Fabric Substrate."

A study on soil removal and

deposition as related to particle size of the soil by T. H. Shuttleworth and T. G. Jones of Unilever, Ltd., Port Sunlight, is entitled "Particle Size and Detergency."

"The Influence of Interfacial Electrical Conditions on the Deposition of Soil Particles on to Cotton from Detergent Solutions", by K. Durham, also of Unilever, reveals a qualitative correlation between interfacial electrical conditions and stability against deposition. Other anti-deposition factors probably include a mechanical barrier due to a solvated layer around the particle and a barrier due to steric effects of adsorbed ions.

A number of French language papers are included in the section on washing. One of these describes quaternaries derived from condensation of fatty acid chlorides with free amino groups of hydrolyzed proteins. Special characteristics are claimed for these cationics, based on polypeptide chains resulting from the hydrolytic degradations of gelatin. The work was carried out at the French Government laboratories in Paris by J. Bolle, P. Ragon, T. Jullig, and D. Boido.

A contribution by H. Etienne of Societe Tensia, Liege, Belgium, deals with the determination of ethylene oxide condensates (polyglycolic) by precipitation with phosphotungstic acid. Nonionics in wool washing and lanolin recovery is the subject of a contribution by G. Lievens of Tensia, Liege, and R. Bovy of Etalbo, Bruxelles.

"Some Interfacial Effects of Calcium Ions in Detergency", a paper by A. S. Porter, Albright & Wilson, Ltd., Oldbury, England, shows that calcium ions adsorbed at the interface between dirt particles and a detergent solution hinder detergency under domestic laundering conditions.

"Aqueous Dispersions of Carbon Black", a study by H. G. Wagner, BASF, Ludwigshafen, Germany, points out that soot is one of the chief soiling agents of textiles in cities and industrial districts. Dispersions of carbon black

(Turn to Page 183)

# Continuous Soap Plants

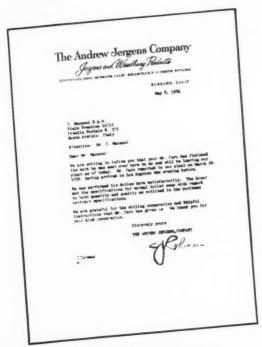


Photograph of a MAZZONI Vacuum Soap Dryer automatically producing toilet soap base for toilet soap manufacture.

- ★ The Vacuum Process, over all other old and new cooling methods, enables you to make use of the water at the temperature available at any factory as it is possible to cool the soap at such a temperature because of the vacuum and the peculiar devices provided—without resorting to expensive cooling equipment—so that its consistency is satisfactory no matter what the cooling water temperature is.
- ★ Our manufacturing range also includes: plants for continuously sulphonating and spray-drying synthetic detergents in the form of hollow beads—continuous fat splitting and fatty acid saponification plants—continuous glycerine recovery and refining plants.

#### Advantages of the MAZZONI Process:

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# NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine. Mac Nair Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be \$1.00 per copy.

No. 2,829,102. Nontarnishing Detergent Compositions Containing Ferric Salts, patented by Edgar E. Ruff, Bergenfield and Elwin E. Smith Paramus, N. J., assignors to Lever Brothers Co., New York. Revealed is a polyphosphate detergent composition consisting essentially of a water-soluble alkali metal polyphosphate selected from the group consisting of tetrasodium and tetrapotassium pyrophosphates, sodium and potassium hexametaphosphates, and hexasodium and hexapotassium tetrapolyphosphates which in aqueous solution tarnishes German silver; from about 1% to about 15% of a water-soluble ferric salt based on the weight of polyphosphate and from about 4% to about 27% of an alkali metal silicate having a SiO<sub>2</sub>:M<sub>2</sub>O ratio of about 2.5 where M is an alkali metal; the amounts of said ferric salt and silicate being sufficient to inhibit such tarnishing.

No. 2,829,103. Nontarnishing Detergent Compositions Containing Salts of Antimony or Bismuth, patentees see above. This claims another detergent composition consisting essentially of an alkali metal polyphosphate which in aqueous solution tarnishes German silver and a water-soluble inorganic salt of a metal selected from the group consisting of antimony and bismuth in an amount to lessen the tarnishing action of the polyphosphate.

No. 2,829,104. Nontarnishing Detergent Compositions Containing Vanadyl Sulfate, patentees see above. Described is a detergent composition consisting essentially of an alkali metal pyrophosphate which in aqueous solution tarnishes German silver and vanadyl sulfate in an amount to lessen the tarnishing action of the pyrophosphate.

No. 2,829,105. Nontarnishing Detergent Compositions Containing Water-Soluble Inorganic Columbates, patentees see above. This patent covers a detergent composition consisting essentially of an alkali metal polyphosphate which in aqueous solution tarnishes German silver and a water-soluble inorganic columbate in an

amount to lessen the tarnishing action of the polyphosphate.

No. 2,829,106. Nontarnishing Detergent Compositions Containing a Water-Soluble Inorganic Tantalate, patentees see above. Covered is a detergent composition consisting essentially of an alkali metal tripolyphosphate which in aqueous solution tarnishes German silver and a water-soluble inorganic tantalate in an amount to lessen the tarnishing action of the polyphosphate.

No. 2,829,107. Nontarnishing Cleaning Compositions Containing Ferrous Salts, patentees see above. A heat dried detergent composition, is patented consisting essentially of a water-soluble alkali metal polyphosphate selected from the group consisting of tetrasodium and tetrapotassium pyrophosphates, sodium and potassium hexametaphosphates, and hexasodium and hexapotassium tetrapolyphosphates which in aqueous solution tarnishes German silver; and a watersoluble ferrous salt in an amount to lessen the tarnishing action of the polyphosphate.

No. 2,829,108. Nontarnishing Detergent Compositions Containing a Hydroxylamine Salt and an Alkali Metal Silicate, patentees see above. Revealed is a detergent composition consisting essentially of an alkali metal polyphosphate which in aqueous solution tarnishes copper and copper and nickel alloys, from about 0.2% to about 12% of a water-soluble inorganic hydroxylamine salt, and from about 13% to about 35% of an alkali metal metasilicate based on the weight of polyphosphate; the amounts of said hydroxylamine salt and metasilicate being sufficient to inhibit such tarnishing.

No. 2,829,109. Nontarnishing Detergent Compositions Containing a Hydrazine Salt, patentees see above. This patent describes another detergent composition comprising an alkali metal polyphosphate which in aqueous solution tarnishes copper and copper and nickel alloys and a water-soluble inorganic hydrazine salt in an amount of at least about 1% based on the weight of polyphosphate and sufficient to inhibit such tarnishing.

A detergent composition comprising from about 5% to about 50% of an alkali metal polyphosphate which in aqueous solution tarnishes copper and copper and nickel alloys, from about 5% to about 40% of an organic nonsoap detergent, and a water-soluble inorganic hydrazine salt in an amount of at least about 1% based on the weight of polyphosphate and sufficient to inhibit such tarnishing.

No. 2,830,742. Aerosol Sprayer, patented by Edward James Gibbons, New York, and Arthur Ira Gebhart, Union, N. J., assignors to Colgate-Palmolive Co., Jersey City, N. J. This patent reveals an aerosol sprayer device for holding a container of pressurized aerosol spray material and

actuating the discharge valve mechanism thereof in response to finger movement comprising, in combination: a longitudinal supporting member having a handle at one end; annular clamp means attached to the other end of the longitudinal supporting member and positioned in the same plane, adapted to encircle the container wall and to be contracted about said wall and thereby securely to support the container in fixed relationship with the longitudinal member at the end thereof, the clamp means being free of obstructions which would be in the path of an aerosol spray discharge from a container held thereby and directed parallel with the longitudinal axis of and away from the longitudinal supporting member; an actuator lever pivoted on the longitudinal supporting adapted to contact the discharge valve mechanism of a clamped aerosol container; and pull means connecting at one end with the actuator and at the other end terminating near the handle and being adapted for finger engagement so that the discharge valve of the aerosol container can be opened by a pull of a finger of a hand grasping the handle of the aerosol sprayer device.

No. 2,831,815. Detergent Compositions, patented by Stephen Cajetan Klisch, Belleville, N. J., assignor to Colegate-Palmolive Co., Jersey City, N. J. A detergent composition is protected consisting essentially of a water-soluble non-ionic aliphatic polyalkylene oxide detergent selected from the group consisting of (a) water-soluble non-ionic polyalkylene oxide condensates with an aliphatic compound having 8 to 30 carbon atoms, said condensates containing about 5 to 50 alkylene oxide groups of 2 to 4 carbon atoms each and (b) water-soluble non-ionic polyoxyethylene condensates with polyoxypropylene glycol containing about 20 to 90% ethylene oxide and having a molecular weight of about 2,000 to 10,000; and an amide compound having the formula:

wherein R—CO— represents a saturated higher fatty acyl group of 10 to 16 carbon atoms, and R' and R" are lower hydroxyalkyl groups of up to about 5 carbon atoms each, the ratio of said non-ionic detergent to said amide compound being from about 100:1 to about 1:4 by weight and sufficient to improve the foaming power of said non-ionic detergent.

No. 2,832,715. Rodent Repellent Methods and Compositions Employing Imidazoles, patented by James L. Jezl, Swarthmore and Samuel E. Jolly, assignors to Sun Oil Co. Claimed is a method for protecting materials normally subject to attack by rodents which comprises: applying to said materials a rodent repellent composition selected from the group consisting of 2-naphthenyl imidazolines and 2-naphthenyl benzimidazoles and acid salts thereof, said composition being present in a rodent repellent concentration.



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#### By John W. McCutcheon

(Consulting Chemist)

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## Products and PROCESSES

### **Test for Nonionic in Soap Mixtures**

**A** NEW method for the determination of non-ionic synthetic detergent additives in soap mixtures is described in a paper by C. B. Stuffins, J. Bibby & Sons, Ltd., published in the April 1958 issue of Soap, Perfumery & Cosmetics, pp. 369-70. The method involves separation of the non-ionic from the mixture, formation of a phosphomolybdic acid complex, and subsequent gravimetric determination. From a previously prepared graph showing the weight of the complex plotted against known weights of the particulate detergent, the percentage of the detergent is obtained by extrapolation.

In the course of the investigation the non-ionic detergent was found to be soluble in cold dioxan, in which solvent soap and inorganic material are insoluble. Thus the major problem of isolating the non-ionic syndet was solved. However, its measurement by a simple gravimetric determination of dioxan extractable material is not practical. Explosion hazards arise when dioxan is evaporated to dryness.

Two methods have been described in the literature for the determination of such material. Both involve the precipitation in aqueous solution of a phosphomolybdic acid complex. One is absorptiometric, the other gravimetric. The latter was found preferable, because it entails less manipulative work.

The presence of per-compounds in soap mixtures may lead to formation of peroxides in the dioxan. However, preliminary heating of the sample in an oven at 100°C will decompose any persalts present. Hazards arising from the toxicity of dioxan vapors can be largely avoided by working in a well ventilated fume cupboard. Any dioxan spilt on the skin should be washed off immediately.

The use of dioxan for the

separation of the non-ionic detergent proved to be such a simple procedure that it became possible to carry out a simultaneous determination of the soap on the insoluble portion of the sample.

#### Method:

Reagents required: (a) hydrochloric acid (20 per cent by vol.); (b) barium chloride (10 grams dissolved in 100 ml water); (c) dioxan; (d) phosphomolybdic acid (10 grams dissolved in 100 ml water); and (e) distilled water.

water); and (e) distilled water. Procedure: Weigh five grams of sample into a 250 ml beaker and place in oven at 100°C for half an hour. Allow to cool, add 20 ml of dioxan, cover the beaker with a watch glass and leave at least two hours in a fume cupboard. Filter through a No. 4 sintered glass crucible into a test tube (eight inches by one inch) with the aid of a suction pump. Wash any insoluble material left in the beaker with three by 10 ml portions of dioxan and transfer to the crucible. Transfer the dioxan extract from the tube, in which it has been collected, to a 250 ml beaker. Rinse the tube with distilled water and add the rinsings to the beaker. Make the volume up to about 150 ml with distilled water. Add in the following order five ml each of the solution (a), (b), and (c). Flocculate the vellowish-green precipitate by bringing to the boil. Cover the beaker with a watch glass and allow to stand over night (18 hours) in the fume cupboard. Filter off the precipitate through a tared No. 4 sintered glass crucible and wash with a minimum of 100 ml of distilled water. Transfer to an oven at 100°C and dry for two hours. The weight of the complex is obtained; then, from a graph previously prepared from known weights of the particular detergent, percent detergent in sample can be calculated.

#### Detergents with "Surfonics"

Detergent formulations based on "Surfonic" nonyl phenol ethylene oxide adducts are suggested in a brochure available from Jefferson Chemical Co., Houston 4, Tex. Two low-foaming laundry detergents for use in automatic washers might have the following compositions:

Component	Weight %	
	(1)	(2)
"Surfonic N-95"	10	15
Sodium dodecylbenzene-		
sulfate	5	10
Sodium tripolyphosphate	35	40
Tetrasodium pyrophosphate	30	-
Trisodium phosphate	17.5	-
Carboxymethylcellulose	2.5	2
Sodium carbonate		33

A liquid dishwashing compound might incorporate the following components:

Component	Weight %
"Surfonic N-95"	60
Water	20
Alcohol (ethyl, n-propyl,	
i-propyl)	19
Perfume	1

A high-foaming liquid detergent formulation is suggested:

Component	Weight %
Ammonium salt of sulfated	
"Surfonic N-40"	50
Diethanolamide of lauric acid	10
Alcohol	25
Perfume	1
Water	14

The ammonium or sodium salt of these adducts can act as foam and detergency boosters in high-foaming moderate duty household detergents which contain a mixture of alkylaryl sulfonate and fatty alcohol sulfate as surface active agents:

Component	Weight %
Sodium salt of sulfated	
"Surfonic N-40"	10
"Surfonic N-40"	2
Sodium dodecylbenzene-	
sulfate	10
Sodium tripolyphosphate	45
Sodium sulfate	33
Sodium metasilicate	7.5
Carboxymethylcellulose	1
Diethanolamide of lauric acid	1.5

A germicidal detergent can be made by blending 10 per cent by weight "Surfonic N-95" with 10 per cent by weight of quaternary ammonium compound and 80 per cent water. For the preparation of sanitizers more than 20 per cent by weight of iodine can be dissolved in "Surfonic N."

For street and side walk (Turn to Page 151)

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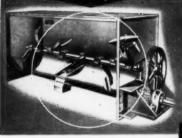
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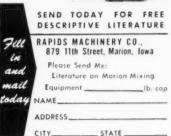
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## PRODUCTION Clinic

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Among fragrance materials which resist alkalies, the following are worthy of mention: hydrocarbons such as diphenylmethane; terpenic alcohols such as terpineol, geraniol, citronellol, and linalool: ethers, such as those of the naphthols (bromelia, nerolin II) phenol ether, diphenyl ether, hydroquinone dimethyl ether; ketones such as ionones, acetophenone, benzophenone, methyl acetophenone, and methyl naphthyl ketone. Coumarin and the ethyl and methyl esters of cinnamic acid are also stable. Benzyl esters of benzoic and cinnamic acid are also suitable and some aldehydes. Citronellal in citronella oil may also be used. Essential oils with a high ester content are not suited for the perfuming of cold made soaps. Perfume should be added to these soaps at the rate of one per cent.

Free alkali content in liquid soaps computed as potassium hydroxide amounts to about 0.03 per cent, the carbonate alkali content to 0.2 to 0.3 per cent. All natural and synthetic fragrance materials used in de luxe soaps can be incorporated in liquid soaps provided

that they are clearly soluble in this medium. Otherwise the final product will be cloudy. Perfume oils are most readily soluble in liquid soaps of high fatty acid content, ranging between 20 and 25 per cent. The perfume should be stirred into a test sample. If turbidity appears and does not clear up within two hours the essential oil is not suitable for use in liquid soaps. Usually this applies to oils rich in terpene.

The cloud point of liquid soap is always lower than the titer of the fatty acids used to make the soap. Soaps based on fatty materials rich in stearic or palmitic acid are therefore apt to turn cloudy through hydrolysis, when strongly diluted with water. Soaps made from oleic or ricinoleic acid vield solutions which do not hydrolyze easily at normal temperatures. Such fatty acids, used in proportions correct for foaming power, will make perfectly clear liquid soaps when fully saponified with caustic potash.

Only water-soluble perfume oils can be incorporated into liquid soaps having a low fatty acid content (five to 10 per cent); all others produce cloudiness. Today, liquid soaps are in keen competition with synthetic detergents, one more reason for emphasis on their fragrance. They are more difficult to perfume than detergents, owing to their alkalinity and tendency to deterioration on prolonged storage. Liquid soaps are made by partially heating the fats they contain and may therefore require more fragrance material than a detergent. One half per cent of perfume oil is the minimum needed and 0.7 per cent is the average recommended for satisfactory results.

Hard soap may be made by boiling the soap solution with salt lye. This method calls for addition of the perfume to the mixture while

in the feeding line to the cooling press. Hard soap and household soapss made by the partial heating method are perfumed directly in the kettle. In either process the fragrance material is in prolonged contact with the alkaline soap at temperatures ranging from 80 to 90°C and the rules of thumb laid down above for perfuming cold made soap apply here. Formerly, about 250 grams of perfume oil were added to 100 kilos of soap. Today the same amount of highly concentrated special soap perfume will take care of a ton of soap. Excess alkali in a finished bar of hard soap is about 0.05 per cent, unless the soap is filled with sodium silicate or metasilicate, when alkalinity will be higher.

Modern saponification processes carried out with special equipment subject the essential oil to extremely high temperatures. Special perfume oils of great thermal stability and the use of protective colloids may be required to perfume soaps made by such methods.

Alkali stability and heat resistance are also required for fragrances to be incorporated in soap-based washing powders. They may be added to the soap batch in the mixer or be sprayed onto the batch, if the floor method is employed. As an alternative the perfume in dry form may simply be mixed with the product.

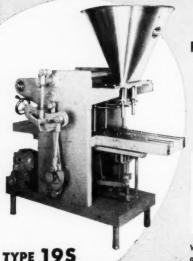
Dry perfumes can also be used to scent bead form synthetic wash powders at the rate of 500 grams per ton of detergent. Karl Bergwein in *Dragoco Report*, No. 2, 1958, published by Dragoco, Inc., 250 West Broadway, New York 13.

#### **New Sugarcane Wax Process**

Availability of a new low-cost process for the extraction of wax from sugarcane has just been disclosed by the U. S. Department of Agriculture. So far the process has been developed only on a small scale. Further large-scale studies are required prior to its commercial use. Essentially the process consists of slurrying the crude residue of the cane juice with hot heptane and



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## COSMETICS: Science and Technology

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This encyclopedic treatment is the result of an industry-wide collaboration of 61 specialists. Many of these contributors are directors of research or research chemists from the leading cosmetic firms and, for specialized subjects, pharmaceutical manufacturers, medical schools, law firms and government agencies are also represented.

The greater part of the 51 chapters describe cosmetic preparation, such as cleansing creams, foundation make-up, lipstick, depilatories, shampoos, toothpaste, perfumes and many others, giving for each product:

physical forms in which the product is made • raw materials • formulations • methods of manufacture • dermatological or other special considerations • abundant literature references.

Other chapters take up such subjects as: history of the cosmetic industry, plant layout and equipment, quality control, physiology of the skin, the Federal Food Drug and Cosmetic Act, patents and trade marks.

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extracting the wax by a method combining filtration, evaporation, and stripping.

Another process for wax extraction has long been in use in Cuba, but it is applicable only to large mills. The new USDA method is the first that holds promise for use in the small and medium sized sugar mills in the U. S.

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#### **ADM Offers Fatty Amines**

Semi-commercial production of primary aliphatic amines was announced last month by Archer-Daniels-Midland Co., Minneapolis. Initial products in this line include technical and distilled grades of lauryl, coconut, tallow, and soybean primary amines. Made at the firm's Wyandotte, Mich., plant they are available from the development department in Minneapolis. Fatty amines are used in surface active agents, corrosion inhibition, textile auxiliaries, etc. ADM expects to add other fatty nitrogen chemicals.

#### More "Multiwax"

Production capacity has been increased by 25 per cent at the microcrystalline wax plant of L. Sonneborn Sons, Inc., New York, it was announced recently by R. G. Sonneborn, the firm's president. The plant is located at Petrolia, Pa.

Increased demand for these flexible waxes by the packaging industry motivated the expansion, Sonneborn's "Multiwax" microcrystalline waxes are marketed on an exclusive basis by Petroleum Specialties, Inc., New York.

#### Detergent Formulas

(From Page 147)

cleaning an addition of 0.1 per cent by weight of "Surfonic N-95" to water is said to leave the surface free from oil and grease stains and to eliminate the hazards of a slippery film, which may form if soap is used for the purpose.

#### **Testing Sulfonation of Alkyl Benzyene**

IN the sulfonation of alkyl benzene it is important to test the content of unsulfonated matter at a stage where incorrect sulfonation can still be corrected. Previously, routine tests were made only after sulfonation and neutralization had already been completed. A quick routine test can be made on the spot by the plant operator at a time when mistakes can still be rectified. The method follows:

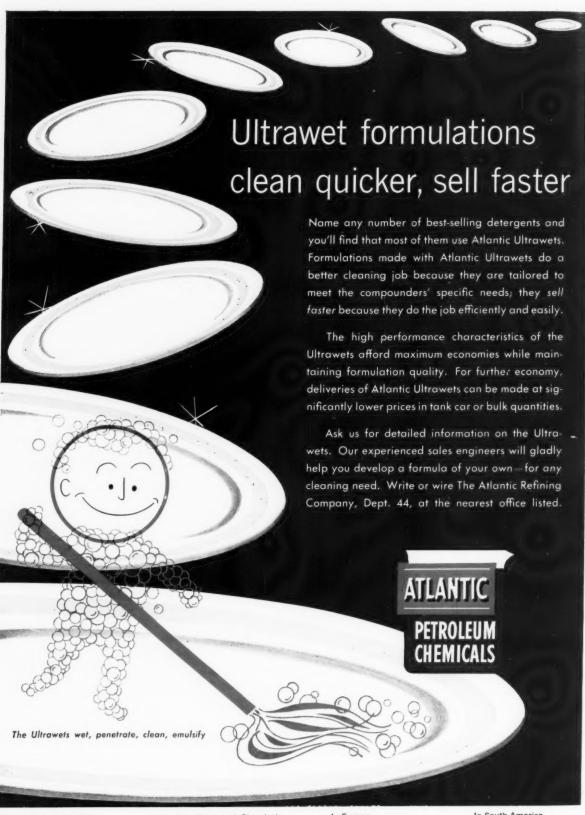
After sulfonation has been carried out, a sample of say 200 grams is taken from the mixture. Ten to 15 per cent water is added in a beaker under cooling and constant stirring. Then a sample is centrifuged. The upper layer is a "washed alkyl benzene sulfonic acid," generally containing 85-90 per cent active detergent. 20 grams of this "washed" acid sulfonate are then dissolved in 100 cc water and neutralized with caustic soda solution to a slight pink reaction with phenolphthalein. After neutralization, the mixture is filled up to a total weight of 180 grams, which gives a solution of approximately 10 per cent active detergent. Now, from this solution 300 cc are filled into a measuring cylinder, and 30 cc alcohol added thereto. At 30° C. no turbidity should appear, provided the sulfonate contains less than 20% unsulfonated matter.

An experienced operator may carry out this test in 10 minutes. The reaction has been found reliable with all types of alkylbenzene based on propylene tetramer benzene. Practically all types of dodecyl benzene supplied by major producers were submitted to this test. No turbidity appeared unless the unsulfonated matter reached the two per cent limit. If, in practice, turbidity occurs, or for actual determination of the amount of unsulfonated content, the usual quantitative method may be used.

Only "washed sulfonate" can be tested by this qualitative method. An excessive surplus of free uncombined sulfuric acid gives too much sodium sulfate on neutralization, which would be "thrown out" in 50 per cent alcohol solution, thereby disturbing accuracy.

The importance of such a fast routine test is self-evident, because necessary adjustments can easily be made in the stage of acid/ sulfonate mixture. One of the most recent developments in sulfonation technique calls for sulfonation with SO2 vapor. In this case progress of sulfonation can be controlled simply by taking a 20 gram sample, neutralizing it with caustic soda and making up with water to 190 grams. No centrifuging is required here. For the SO3 process quick analytical control is even more essential than for the conventional sulfuric acid and/or oleum process. In the case of SO<sub>3</sub> sulfonation, it is advisable to reheat the neutralized sulfonate solution to about 80° C. and to adjust the alkalinity to a pH of about eight to nine. This prevents so-called "pH drift" which may occur in sulfonates produced by the SO<sub>3</sub> process. Then 30 cc are withdrawn from the neutralisate and diluted with 30 cc alcohol, as above.

It has been suggested to test the acid sulfonate of the neutralized material by simply dissolving a sample in distilled water. It was supposed that appearance of turbidity would indicate the presence of any unsulfonated matter. This test was found to be quite unreliable. Six per cent and more of unsulfonated material still gave clear solutions in distilled water. The solubilization effect of the alkyl aryl sulfonate itself explains this phenomenon. It might be considered a contradiction that turbidity appears at much lesser percentages in a 50 per cent alcohol solution, where one would expect that the alcohol would increase the solubilization of oil. However this is not the case. Key to this contradiction may be the fact that the micellar structure of the alkyl aryl sulfonate solution is destroyed by the polar solvent alcohol. A. Davidsohn, Haifa, Israel, in Soap, Perfumery & Cosmetics, April 1958, p. 392.



Philadelphia, Providence, Charlotte, Chicago In Canada Naugatuck Chemicals Division of Dominion Rubber Company, Ltd. In Europe Atlantic Chemicals SAB, Antwerp, Belgium In South America Atlantic Refining Company of Brazil, Rio de Janeiro

## SOAP PLANT Observer

#### By John W. McCutcheon

ROVISIONS for safety must be made in the construction of a detergent spray drying tower. Major outlines and general principals of spray tower engineering were presented in the last two columns. Safety devices built into the drying equipment are of particular importance where synthetic detergents are processed because they are more flammable than soap, when overheated.

Accumulations of dried product on the hot tower wall where they char and may catch fire, are one of the major hazards. This may be avoided by periodic cleaning of the tower. Generally the cleaning device is incorporated in the tower construction. It may be a mechanical scraper, a water wash ring, or any one of a number of other devices.

Although explosions in modern towers are rare, their possibility must never be overlooked. For highest operating efficiency, the air for most towers is heated directly in the furnace. Such plants require special precautions built into the furnace to prevent air from entering the tower when the flame in the furnace is not burning. Gasses formed by the passage of petroleum oil over the hot brickwork constitute another hazard: they can very easily fill the tower with an explosive mixture. Every tower should be fitted with an explosion door or an automatic opening device, to compensate for sudden changes in pressure engendered by fire or other causes. A 100 foot tower measuring 20 feet in diameter might have a door 50 square feet in area which is fitted with shear bolts.

Corrosion in the tower is another of the problems which the engineer must keep in mind. Generally a spray drying tower is constructed of stainless clad steel. For



economy's sake the cladding may be run down only part of the tower, because the dried product does not present a serious corrosion problem. Some towers are built of a light stainless metal and reinforced with steel members on the outside. Towers of tile construction have been used with success but are not recommended except under very special circumstances, because they present difficulties in cleaning.

The tower engineer deals with the movement of thousands of cubic feet of air a minute at different temperatures. The volume of air circulating must therefore receive close attention in all his calculations.

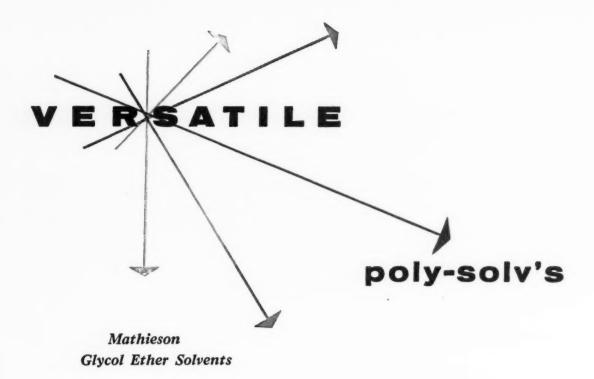
On large towers the use of dual fans is desirable, one at the inlet and one at the exhaust, with automatic pressure control. This may be accomplished by damper adjustment or other means. The inlet fan should have specially constructed bearings which will not be affected by the high temperatures prevailing at this point. Water-cooling of the bearings is usually not necessary, although it may be resorted to in some instances.

Ducts leading to and from the tower should be streamlined for highest efficiency. However, where the tower is constructed so as to be adaptable to concurrent and countercurrent operation, special problems are encountered which may be solved by slightly oversized fans.

Heat transfer in spray tower operation is by no means close to theoretical. The furnace should therefore be of a size capable of delivering at least twice as many BTUs than are theoretically required for evaporation.

The choice of nozzles and their installation has been briefly outlined in a previous column. In some plants air or steam is used to assist atomization. This is not good practice, because a secondary factor is introduced into the system which tends to cause variation in particle size and non-uniformity of the final product. These aids to atomization are usually resorted to in the absence of pressure pumps and in plants where the pressure pumps do not operate correctly. The remedy should be sought in an improvement of the pumping installation. Some of the common causes of high pressure pump failure include insufficient back pressure; air pockets due to faulty crutching or lack of deaeration equipment; and clogging of the valves by lumpy material. The backing pump should deliver the product to the high pressure pump at approximately 50 psi. Crutching must not be prolonged excessively to the point of phosphate hydration. The use of an efficient screen system between drop tank and nozzle is essential.

Two sets of factors govern the uniformity of product characteristics in general and of density in particular. The first group of factors includes the uniform chemical composition of the slurry fed to the tower and uniformity of product removal from the tower and delivery to the storage bin. Correct products removal from the tower is best accomplished by air transfer. In some installations an air lock valve and conveyor belt are used for this step. This concession to efficiency is usually made in the construction of towers which



The Poly-Solv's are clear liquids which are miscible with water and most organic solvents. They contain both an ether and an alcohol group and are therefore strong solvents for a variety of substances. Their high solvency and lack of odor make them ideal for use in many formulations, including those requiring mutual solvency, such as cleaners, dry-cleaning soaps, insecticides, cutting oils.

Poly-Solv EM, ethylene glycol monomethyl ether, is used for sealing moisture-proof cellophane and as an aid in obtaining dye penetration in acetate rayon fibers.

Poly-Solv EE, ethylene glycol monoethyl ether, is used in lacquer formulations; is a good solvent for resins, naphthol dyes, reduced vat dyes and plasticizers.

Poly-Solv EB, ethylene glycol monobutyl ether, is a solvent for lacquers; it strengthens blush resistance, improves flowout, levelling and gloss.

Poly-Solv DM, diethylene glycol monomethyl ether, is used in brake fluids, brushing lacquers, spirit-type stamp-pad ink dyes and textile dye pastes.

Poly-Solv DE, diethylene glycol monoethyl ether, is used in brake fluids, non-grain raising wood stains and in industrial cleaners.

Poly-Solv DB, diethylene glycol monobutyl ether, is valuable where a very low evaporation is required, particularly in vinyl organosis.

Poly-Solv's are produced at Olin Mathieson's modern organic chemicals plant in Brandenburg, Kentucky, and are available in tank cars, tank trucks and 55-gallon drums. Stock points are located in key industrial cities. Write today for data sheets and other important details.

Ethylene Oxide • Ethylene Glycol • Diethylene Glycol Triethylene Glycol · Polyethylene Glycols (Poly-G's) Glycol Ether Solvents (Poly-Solv's) · Ethanolamines Surfactants (Poly-Tergents) · Ethylene Dichloride Dichloroethylether · Polyamines · Ethylene Diamine

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ORGANIC CHEMICALS DIVISION OLIN MATHIESON CHEMICAL CORPORATION ONE PARK AVENUE. NEW YORK 16, NEW YORK

5634

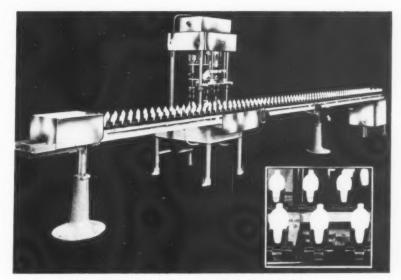
are claimed to "spray dry anything."

The second set of factors governing product characteristics consists of the controls built into the tower itself: Nozzle pressure, temperature, and flow; overall air throughout; and air temperatures at the inlet and outlet. How uniform can a spray dried detergent's density be expected to be? Plus or minus 0.02 would be a reasonable range of variation.

#### Wash and Wear Tests

A plan to verify and standardize "Wash and Wear" claims for various types of garments was set forth at a recent trade press conference held by United States Testing Co., Hoboken, N. J. Two classifications have been set up and seals designed to label the garments accordingly. The seals read: "Verified Wash and Wear with no Ironing" and "Verified Wash and Wear with Minimum Care." Four laundering methods are used to determine into which of the two categories the laundered material may fall. The tests are: hand wash and drip dry; machine wash and drip dry; machine wash and hang dry; and machine wash and tumble dry. Results are evaluated with the help of a standardized viewing apparatus and a procedure based on psychometrics. Special tests for color fastness, shrinkage and strength are included in the evaluation proced-

The use of seals of approval backed by tests substantiating claims is not new. "If it is safe in water, it is safe in 'Lux' was used as a slogan on garment labels 20 years ago. Lever Brothers, Ltd., Toronto, Ont., ran tests to substantiate the claims of cloth manufacturers. Swatches of submitted cloth were washed under standard conditions using water only and using standard soap solution. The processed cloth was evaluated for color fastness, fading, shrinkage of warp, and shrinkage of filling. Manufacturers whose cloth met the basic specifications were given cards



New MRM balanced pressure filling machine.

attesting to washability of the fabric in "Lux" soap flakes.

#### **Armour Issues Bulletin**

A new 12-page brochure describing the "Duomeen" group of N-alkyl trimethylene diamines has been issued by Armour and Co., 1355 West 31st Street, Chicago 9. Chemical and physical properties of these aliphatic compounds and their salts are covered and use information is supplied.

The "Duomeens" are derived from coco, soya, oleic and tallow fatty acids. The water soluble or dispersible forms of "Duomeen C" (coco fatty acid derived) have germicidal properties, and are used for microbiological control in industrial water systems and secondary oil recovery. The film forming properties of the series makes these amines efficient corrosion inhibitors. Copies of the booklet are available.

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#### New MRM Filler

A new balanced-pressure filling machine designed to fill thin-walled plastic containers without causing bulges or overfills was introduced recently by MRM Co., 191 Berry St., Brooklyn 11, N.Y. The new unit is claimed to maintain accuracy of fill no matter how long the production run and is designed for handling viscous materials. According to the manufacturer, the balanced-pressure filling unit is available in all models, including straightline semi-automatics and rotary fully automatics.



A new device for cleaning any type container suited for spray clea was introduced recently by Richmond Machine Co., Philadelphia. Called "Jiffy Cleaner," the new unit may be used for cleaning both open head and closed head bung type 30- and 55-gallon drums, ink tubs, pails, trash cans and tote boxes. The machine features a screenbox with removable screens for filtering the cleaning liquid, spraying jets for cleaning both inside and outside the container, and a handwheel mounted outside the tank to revolve the containers during the spraying period. Actual production rate depends on the cleaning time cycle. If 30 seconds of spraying time and 30 seconds to load and unload are required, 480 units could be cleaned in 8 hours.



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. . . copper, brass, zinc, aluminum against corrosion and protects china, glass, enamel from stain accumulation. It's got the built-in protection from the use of PQ Soluble Silicates. Soluble silica, the component of all PQ Silicates inhibits alkali attack on non-ferrous metals, dishes, glassware and silver.

Of course, PQ Silicates are valued for their excellent soil removing action. All these advantages are yours plus econ-

omy. By replacing from 10% to 50% of the more expensive builders with low cost soluble silicates, as good or better detergency is obtained.

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SOAP and CHEMICAL SPECIALTIES





### PEOPLE · PRODUCTS · PLANTS

**AMA's Model Labeling Bill** 

Peck to National Labs.

Little Optimistic on '58

**Record March for Johnson** 

New liquid detergent of First National Stores. Inc., is marketed in 12 and 22 ounce containers by American Can Co. Formula for "Finast" was developed by Curley Co., Philadelphia contract packager. Curley also manufactures and fills the detergent for the chain.





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#### GIVAUDAN'S CYCLAMEN ALDEHYDE

In this widely used aromatic chemical, Givaudan has achieved an unsurpassed standard of quality and uniformity.

A pure synthetic body, Cyclamen Aldehyde is made under rigid control from readily available domestic materials. It is stable in price as well as in olfactory and chemical quality.

With its intensely floral scent, Cyclamen Aldehyde is most useful in lily-of-the-valley, lilac, linden and cyclamen fragrances; in floral bouquets; and in cream and soap perfumes.

Givaudan offers Cyclamen Aldehyde in different grades to meet the varying needs of the perfumer. Our staff will gladly help you determine the grade best suited for your particular requirements.



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SOAP and CHEMICAL SPECIALTIES

# News

#### Selig Appoints Chapman

Selig Co., Atlanta, Ga., recently announced the appointment of Cyrus Chapman as general man-



Cyrus Chapman

ager of its newly-established subsidiary Janitors Unlimited, Atlanta. Mr. Chapman had represented Selig in the Atlanta area for the past nine years, in addition to operating his own janitorial service.

Janitors Unlimited offers maintenance services to commercial, industrial and institutional establishments, according to Simon S. Selig, Jr., president of the parent company. The new concern will open branch offices in Kansas City, Dallas, Houston, New Orleans and Miami in the near future.

#### Stepan Sales Lower

A decline in sales and earnings was announced by Stepan Chemical Co., Chicago, in the first quarter of 1958. Net sales totaled \$3,942,359, compared with \$4,031,875 in the corresponding period of 1957. Net income amounted to \$243,667, equal to share earnings of 41 cents. This compared with \$257,290 and 43 cents in the first three months of last year. Figures for both periods include earnings of Ninol Laboratories, which was acquired by Stepan in August, 1957. A. C. Stepan, Jr., president, said

that it is planned to dispose of the Ninol plant in the near future and consolidate its operations at Stepan's Chicago plant.

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#### New Multi-Clean Film

A new 12-minute film in sound and color, entitled "Your Terrazzo or Oxychloride Floor . . . And How to Maintain It," was issued recently by Multi-Clean Products, Inc., St. Paul, Minn. The film illustrates the care and maintenance of terrazzo and oxychloride flooring materials, emphasizing the use of Multi-Clean's line of waxes during the treatment. Special problems such as how to take care of scuffing, dirt, stain removal, and how to patch traffic areas are also explained in detail. Prints of the film may be borrowed for showing from Multi-Clean distributors.

#### **Babbitt Names Thatcher**

Russell W. Thatcher has been appointed administrative vice-president and a director of B. T. Babbitt, Inc., New York, it was announced recently by Marshall S. Lachner, president. Mr. Thatcher formerly was administrative assistant to the president. Before coming to Babbitt late in 1957, Mr. Thatcher was manager of the Kirkman Division of Colgate-Palmolive Co., New York.

R. W. Thatcher



#### White King Names Jay

William Jay, executive vicepresident of Los Angeles Soap Co., Los Angeles, has been elected vice-



William Jay

president and a director of its White King industrial division, it was announced recently by Andrew K. Forthmann, president and chairman of the Los Angeles board. Prior to coming to Los Angeles Soap in the beginning of this year, Mr. Jay was with Squirt, Van Nuys, Calif., soft drink manufacturer, for 17 years.

#### Vinacke SPAA President

Harold Vinacke, Jr., group head in the office methods planning department of Procter & Gamble Co., Cincinnati, recently was elected president of the Cincinnati Chapter of the Systems and Procedures Association of America.

#### New Nonionic from Ultra

A new nonionic detergent and emulsifier has just become available from Ultra Chemical Works, Inc., Division of Witco Chemical Co., New York. The new product is trade named "Neopone NP 10." Its active ingredient is an ethylene oxide condensate of non-ylphenol. It comes as a water-white liquid of mild odor and ready solubility.

# LATEST TECHNICAL BOOKS

# CHEMICAL SPECIALTIES • DETERGENTS • SOAPS INSECTICIDES • DISINFECTANTS • TOILETRIES

1. Analysis of Insecticides and Acaricides, by Gunther-Blinn. 706

	pages, 72 inus., 30 tables. Complete fredise on sampling, isolation and determination, including residue method. Price: \$14.00		actions of over 1,000 materials selected in response to a que tionnaire sent to cosmetic manufacturers. Includes a chapt
2.	Organic Solvents, completely revised second edition by Riddick and Toops. 560 pages including tables of physical properties of 254 solvents. Covers physical properties and methods of	10.	on the skin by Howard W. Haggard, Director, Applied Physic logy Laboratory, Yale University. Price: \$12.50.  The Practice of Modern Perfumery, by Paul Jellinek, translate
3.	purification. Price: \$8.50.  Synthetic Detergents, by John McCutcheon. 445 pages, 56 illus. Basic book covering the over-all subject of detergents including the various types of detergents designated as to class, manufacture, application and properties. Price: \$7.10.		and revised by A. J. Krajkrman. 224 pages. Covers an introduction to perfumery; the perfumery of cosmetics; the perfumery of toilet soaps; perfumery, cosmetics and psychology. Price: \$4.75.  Cosmetics: Science and Technology, edited by Edward Sagarin
4.	Surface Active Agents and Detergents, by Schwartz-Perry. Two volumes. Volume 1: 590 pages, 51 illus., 4 tables. Covers processes for synthesizing and manufacturing surface active agents, physical chemistry of surface active agents and practical applications of surface active agents. Price: \$12.00. Volume II: Approximately 860 pages, approximately 26 illus. and tables. Covers processing for synthesizing and manufacturing surfactants, special function surfactants and compositions, the physical and colloidal chemistry of surfactants and practical applications of surfactants. Price: approx. \$18.00.		1453 pages, 138 illus., 107 tables. Covers origin, developmen of cosmetic science and discusses individual products such a hand creams, suntan preparations, skin lighteners, shavin scaps and creams, nail polishes and removers, deodorants acrosol cosmetics and many other cosmetic and tailetry products. Price: \$25.00.  Industrial Oil and Fat Products, by Alton E. Bailey. 991 pages 164 illus. 133 tables. Covers the nature of fats and oils, thei composition and structure; raw materials; industrial utilization Price: \$16.50.
5.	Detergent Evaluation and Testing, by Jay C. Harris. 220 pages, 26 illus., 15 tables. A critical selection of methods and procedures for the testing of detergents. Price: \$3.75.	□ 13.	Fatty Acids, by Klare S. Markley. 678 pages, 81 illus., 16: tables. The chemistry and physical properties of fats and waxes. Price: \$13.50.
	Organic Insecticides, by R. L. Metcalf. 402 pages, 7 illus., 70 tables. Covers most organic insecticides, their chemistry and their mode of action. Price: \$8.50.	□ 14.	Soap Manufacture, by Davidson et al, in two volumes. Volume I: 537 pages, 66 illus., 118 tables. Covers the history of the
	Advances in Pest Control Research, edited by R. L. Metcalf. Volume I: 522 pages, 11 illus., 13 tables. Covers the most recent advances in all phases of the applied science of pest control. Price \$11.00. (Volume II in preparation)	<b></b>	soap industry, theoretical principles of soap manufacture, raw materials of soap manufacture and the fatty raw materials Price: \$12.50. (Volume II in preparation)  Modern Chemical Specialties, by Milton Lesser. 514 pages, 22
	Handbook of Pest Control, by Arnold Mallis. 1068 pages, over 200 illus. Latest reference volume dealing with household and industrial pests, insecticides, rodents, etc. Price: \$9.25.		madern Chemical specializes, by Millon Lesser. 314 pages, 22 illus. Covers formulation, properties and uses of some fifty types of household, industrial and automotive chemical specialties. Price: \$7.25.
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#### French Plant for Oronite

A new plant for the manufacture of detergent alkylate was opened recently near Le Havre, France, by Oronite Chemical Co., San Francisco. The plant, which has an initial annual capacity of 32,000,000 pounds, is owned and operated by a new chemical company, Societe Petrosynthese. Oronite is one of three partners in Petrosynthese, the others being French firms—Compagnie Francaise de Raffinage and Atlantique-Progil-Electrochemie. The new structure covers about five acres of land.

According to T. G. Hughes, Oronite president, the Le Havre site was selected because of its accessibility to water and rail transportation, and its proximity to raw materials. Propylene polymer, one of the principal materials used in the manufacture of detergent alkylate, will be supplied by one of the partners in the new firm, Compagnie Francaise de Raffinage, which is located about two miles from the new unit. Another principal material, benzene, will be purchased from other French primary suppliers.

Oronite is currently engaged in producing alkane at Grange-mouth, Scotland, at a plant which went on stream early in 1956. The unit is operated by Grange Chemical Co., in which Oronite is a partner.

#### Hooker Merges With Shea

Hooker Electrochemical Co., Niagara Falls, N. Y., has merged with Shea Chemical Corp., New York, it was announced recently by the boards of directors of the two concerns. Formal approval of the consolidation was voted upon by the shareholders of both companies at separate meetings held May 28. The continuing company will be known as Hooker Chemical Corp.

Hooker stockholders favored the proposal by a vote of almost 88 per cent, while at Shea more than 93 per cent of the shareholders were in agreement with the merger. According to terms of the agreement, Hooker exchanged 841,776 shares



A new addition to Oronite Chemical Company's overseas facilities is this detergent alkylate plant near Le Havre, France. The plant, which has an annual capacity of 32 million pounds, will help supply a growing European demand for alkane, Oronite's basic raw material for household and industrial detergents. The plant is operated by Societe Petrosynthese, a new French firm in which Oronite is a partner.

of its common stock for all of the presently outstanding 1,401,010 shares of class A and class C common stock of Shea. Also 42,200 shares of Hooker common were exchanged for 6,000 shares of Shea's \$7.00 cumulative preferred stock.

Vincent H. Shea, formerly president of Shea, now joins the 12 former Hooker Electrochemical directors on the board of Hooker Chemical Corp. No other executive changes are contemplated at the present time.

#### Arthur R. Cade Retires

Arthur R. Cade, for the past 18 years chief bacteriologist for Givaudan Corp., Delawanna, N. J., and its subsidiary, Sindar Corp., New York, last month announced his retirement. Dr. Cade specialized in antiseptic, germicide, fungicide and disinfectant applications and manufacture, a field in which he had been active for 35 years.

The author of many scientific papers, he has had three U. S. patents issued to him, covering germicidal detergents, skin degerming preparations and mildew-proofing compounds. He also wrote two chapters, one on essential oils

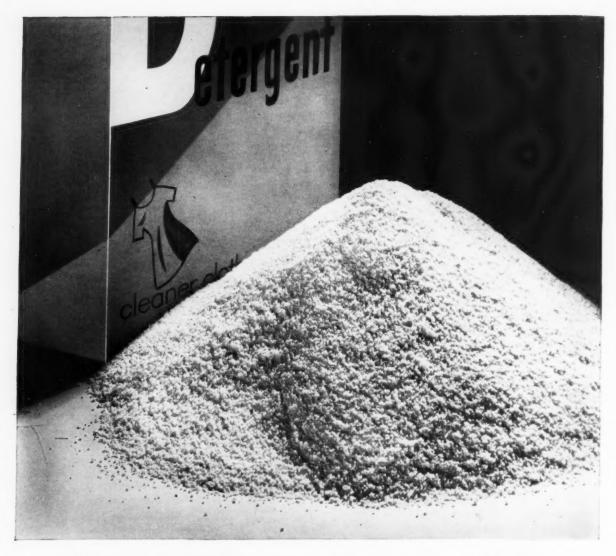
and one on bisphenols, for the textbook, "Antiseptics, Disinfectants, Fungicides and Chemical and Physical Sterilization," which was edited by Dr. George F. Reddish, in 1954.

Prior to joining Givaudan in 1940, Dr. Cade was associated with National Carbon Co., Fremont, O., and Prest-o-Lite Co., Indianapolis, as research chemist, and Lavoris Chemical Co., Minneapolis, and Rilling-Arnao Co., Minneapolis, manufacturers of cosmetic preparations, as chief chemist. He received his doctors degree from the University of Minnesota.

#### Mathieson Sales Lower

Sales and earnings of Olin Mathieson Chemical Corp., Baltimore, showed a sharp decline in the first three months of 1958, according to Thomas S. Nichols, board chairman. Total sales were \$127,625,000, compared with \$136,342,000, in the first quarter of 1957. Net income fell to \$4,473,000, equal to share earnings of 33 cents, from \$10,010,000 and 75 cents, in the first quarter a year ago.

Mr. Nichols attributed about half of the decrease in profits to non-operating overhead charges.



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#### SHEA CHEMICAL CORPORATION

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SOAP and CHEMICAL SPECIALTIES

#### **Sunray Names Jones**

Donald T. Jones has been named manager of the newly created wax sales department of D-X



Donald T. Jones

Sunray Oil Co., Tulsa, it was announced recently by Stanley D. Breitweiser, marketing vice-president. Mr. Jones previously was vicepresident and technical director of Industrial Raw Materials Corp., New York wax manufacturers. He also had been associated with Atlantic Refining Co., Philadelphia, and Socony Mobil Oil Co., Paulsboro, N. J. According to Mr. Breitweiser, the establishment of the new department marks the beginning of an expanded sales program for the company's line of waxes. Previously, D-X Sunray had concentrated only on export and wholesale sales of wax.

#### **Patclin Incorporates**

Patclin Chemical Co., 510 Madison Ave., New York 22, has been granted a charter of incorporation to manufacture soaps. A capital stock of \$100,000 was listed. The company is headed by Cornelius J. Collins, Glen Cove, N. Y.; William Cameron, Locust Valley, N. Y.; and Vincent Broccolo, Locust Valley, N. Y.

#### Stauffer Names McLaughlin

Philip H. McLaughlin has been appointed manager of sales development for the industrial chemicals division of Stauffer Chemical Co., New York, it was announced recently. He will supervise the sales development department, which recently was expanded to include the firm's technical services group. It was also announced that Ernest W. Rivers has been named head of the product manager group. He will be responsible for sales analysis, product scheduling, appraisal of sales market trends and supervision of sales policy.

#### P&G Top Advertiser

Procter & Gamble Co., Cincinnati, was the leading advertiser during 1957 in magazines, Sunday supplements and network television, spending a total of \$57,191,-511. This was approximately \$16,-000,000 more than the total expenditure of the number two firm, General Motors Corp., Detroit. Other concerns listed in the top ten were Colgate-Palmolive Co., New York, in fourth place with a total expenditure of \$29,078,118; Lever Brothers Co., New York, seventh with \$23,565,993 and American Home Products Corp., in eighth place with \$22,431,011. The breakdown of P&G's advertising in these three media was \$47,046,015 for network television; \$9,130,866 for magazines and \$1,014,630 for Sunday supplements.

#### **Record Johnson Sales**

S. C. Johnson & Son, Inc., Racine, Wis., recorded its largest sales month in its 72-year history during March, it was revealed recently by Howard M. Packard, president. Because of company policy, sales and earnings figures were not disclosed.

Mr. Packard said that the new monthly sales mark was due mainly to the five new products that the company has introduced since the first of the year. The new products include "Instant J-Wax," "Klear," "Johnson" white wall tire cleaner, "Pledge" all-purpose polish, and "Step-Ahead" industrial floor finish. "Instant J-Wax," "Johnson" tire cleaner and "Pledge" are aerosol products.

#### Conco Advances Knowles

Vance E. Knowles has been named general sales manager of Conco Chemical Co., Dallas sani-



Vance E. Knowles

tary supply distributor, it was announced recently by Lacy E. Crain, president. Mr. Knowles formerly had been a district sales manager. Prior to joining Conco, he had been with the U.S. Department of Agriculture, Production and Marketing Administration, Processed Foods Inspection Service.

#### **New Aromatic Fragrance**

Aromatic Products, Inc., New York, recently introduced a new fragrance to its line of aromatic specialties and perfume materials. Called "Blossalia," the new fragrance may be used in cosmetics and many chemical specialty products, including shampoos, liquid soaps and detergents, aerosol room deodorants, insecticides, and bubble baths, according to the manufacturer.

#### Rohm & Haas Sales Off

Sales and earnings of Rohm & Haas Co., Philadelphia, declined in the first quarter of 1958, it was announced recently by Otto Haas, president. Net sales totaled \$39,-242,000, compared with \$43,935,000 in the first three months of 1957. Net income amounted to \$2,849,000, equal to share earnings of \$2.60. This compared with \$4,102,000 and \$3.76 in the first quarter of 1957.

# TALLOIL TALK FROM A

Arizona

CHEMICAL COMPANY
World's largest producer of
products based on Tall Oil



#### Peck to National Labs.

M. E. Peck has been appointed executive vice-president of National Laboratories, Inc., Toledo, a



M. E. Peck

subsidiary of Lehn & Fink Corp., New York, it was announced recently by Dr. Edward Plaut, president of Lehn & Fink. Mr. Peck will assume his new appointment prior to July I. Mr. Peck presently is president of Spirella Co., Niagara Falls, N. Y. He also heads Spirella Co. of Canada, Ltd., Niagara Falls, Canada.

National Laboratories manufactures "N-L" concentrate, a liquid, heavy-duty detergent, "Vani-Sol," a liquid bowl cleaner, and "Duratex," an industrial floor wax.

#### Little Foresees "Good '58"

Edward H. Little, president and chairman of the board of Colgate-Palmolive Co., New York, expects "another good year for the

Edward H. Little



company in 1958." Mr. Little said recently in a report to stockholders that despite "recessionary trends, it is my belief that 1958 will be a year during which Colgate-Palmolive will continue its growth and progress, on both a dollar and unit basis throughout the world."

In reviewing the divisionalization plan of the organization begun early in 1956 and completed last year, Mr. Little expressed confidence that the plan will "help the company realize its full profit potential in the future, even though the effects of such a reorganization may not be immediately felt."

#### **Babbitt Advances Carroll**

Owen Carroll has been named product manager of the marketing service group of B. T. Bab-



Owen Carroll

bitt, Inc., New York, it was announced recently by Jack W. Sugden, vice-president and director of marketing. Mr. Carroll will be responsible for marketing "Cameo" copper cream cleaner. He will also act as coordinator in the introduction of aerosol products into the grocery field. He has been associated with Babbitt for three years and formerly was director of marketing.

#### **Max Factor Names Abrams**

Jack Abrams, treasurer and comptroller of Max Factor & Co., Hollywood, Calif., was recently elected to the company's board of directors. Mr. Abrams joined Max Factor in 1939 as comptroller. He was named treasurer in 1955.

#### **Atlas Appoints McGrath**

Appointment of Cornelius D. McGrath as marketing group manager for the chemicals division



Cornelius D. McGrath

of Atlas Powder Co., Wilmington, Del., was announced recently by Bruce M. Bare, marketing manager. Mr. McGrath will have charge of the division's cosmetic and pharmaceutical industries group. He previously was associated with Chas. A. Pfizer & Co., Brooklyn, where for the past six years he had been midwest field sales manager.

#### Keller to Fries & Fries

Karl T. Keller, since 1952 chief chemist of Schimmel & Co., New York, recently joined the flavor and chemical research staff of Fries & Fries, Inc., Cincinnati. At one time director of production and development for Schimmel & Co., G. G., Miltitz, Germany, he had been associated with the Schimmel organization for 20 years.

Karl T. Keller





... trying to keep up with today's killing pace? Relax, brother, relax! It isn't worth the price. But here's something that is: Let FRITZSCHE'S staff of perfume specialists take over your fragrance problems. Put it up to them to provide you with appropriate perfumes tailored to your

products at whatever prices your budget will permit. These experts will study your materials, develop fragrances, and even panel-test them to assure you the best possible odor value for your money. Then, after your own critical evaluation and approval, FRITZSCHE will supply the selected perfume concentrates promptly on order in any quantities required. When you let FRITZSCHE take over this responsibility you can bid farewell to your fragrance worries. It costs nothing to try our service . . . you pay for the fragrances we develop for you only when and if they earn your approval. Isn't this suggestion worth a try?



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#### Joins Lehn & Fink

Appointment of William P. Schliemann as assistant sales manager of the Tussy Cosmetics Divi-



Wiliam P. Schliemann

sion of Lehn & Fink Products Corp., New York, was announced recently by Paul Carey, division vice-president and general manager. Mr. Schliemann will be responsible for coordination between merchandising and sales activities and for marketing studies. In addition, he will supervise sales to all military post exchanges. He comes to Tussy from Helene Curtis Industries, Inc., Chicago, where he was assistant director of eastern operations. Prior to that, he was assistant director of operations and marketing service for Lentheric Division of Helene Curtis.

#### **Barbasol Names Three**

Three divisional sales managers for Barbasol Co., Indianapolis, have been named regional vice-presidents, it was announced by the company last month. The recent appointees include Arnold Katz, Westbury, L. L. Charles S. Simmons, Ocean City, N. J., and Walter Davidson, Versailles, Ind.

#### Vat Dyed Shirts For Safety

Vat colored shirts and jackets play a major role in modernday on-the-job safety when worn by workers in the construction field, according to Henry Herrmann, executive secretary of the Vat Dye Institute, 350 Fifth Ave., New York 1. Locked permanently into the fabric of the shirt, the colors serve to identify workers by the nature of their jobs, Mr. Herrmann said, thus eliminating the cause of many serious accidents. The dyes will not fade from washing, bleeding, sunlight, dry cleaning or body perspiration and will endure continual exposure to the elements of the weather, he added.

#### Gross New Gillette Head

Election of Boone Gross as president of Gillette Co., Boston, was announced recently. He succeeds Carl J. Gilbert who becomes board chairman, filling the vacancy created by the recent retirement of Joseph P. Spang, Jr. Since 1952, Mr. Gross had been president of the Gillette Safety Razor Co., a division of Gillette Co.

#### **Insecticide Tablets**

A new outdoor logging insecticide in tablet form has been announced by Continental Chemiste Corp., Chicago. Called "Outdoor Bug-Tab," the product is used by placing a tablet on a plate, point up, and touching a lighted match to the point of the tablet. A white smoke is then emitted which logs the surrounding area to control mosquitoes, flies, gnats and other small bugs, according to the manufacturer. "Outdoor Bugtab," comes in 25-tablet screw-cap jars.



#### Shulton Appoints Lantz

Walter P. Lantz recently was named advertising director for Shulton, Inc., Clifton, N. J., it was



Walter P. Lantz

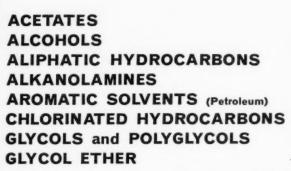
announced by George L. Shultz, president. Mr. Lantz formerly was associated with Bristol-Myers Co., Hillside, N. J., as vice-president of the products division and secretary of the general executive committee. He is currently chairman of the board of the Audit Bureau of Circulation.

#### Benjamin NFSMA Officer

Robert T. Benjamin, president of Leeben Color and Chemical Co., New York, was elected vice-president of the National Fruit & Syrup Manufacturers Association at the organization's annual meeting held recently in New York. In addition, the association presented Mr. Benjamin with a bronze plaque for his service to the fruit and syrup industries.

#### **Wyandotte Sales Decline**

Sales and earnings of Wyandotte Chemicals Corp., Wyandotte, Mich., fell sharply in the first quarter of 1958, according to a financial report issued recently by the company. Sales totaled \$16,789,000, compared with \$19,454,000 in the first three months of 1957. Net income dropped to \$114,000 from \$904,000, equal to share earnings of 54 cents, in the first quarter of last year. No share earnings were reported in the first quarter of 1958.



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SOAP and CHEMICAL SPECIALTIES

#### **Burkhart on Lipton Board**

Election of William H. Burkhart, president of Lever Brothers Co., New York, to the board of di-



William H. Burkhart

rectors of Thomas J. Lipton, Inc., Hoboken, N. J., was announced recently. Charles A. Massey, president of Lever Brothers, Ltd., Toronto, was also named to a similar post with Lipton.

Mr. Burkhart, who has been associated with Lever since 1925,



Charles A. Massey

is also a director and a member of the company's executive committee. Mr. Massey is also president of the Pepsodent Co., Ltd., Toronto.

#### More Hexachlorophene Data

Sindar Corp., 321 West 44th St., New York, recently published a supplement to its technical bulletin "'G-11' Hexachlorophene U.S.P." The bulletin, which was issued in March, 1955, contains an indexed annotated bibliography of literature pertaining to "G-11." The new supplement appears in Sindar Reporter, issue number two, a company publication, and includes abstracts of 20 articles and four patents. An index to the supplemental abstracts similar to the one which appeared in the original edition also has been issued. Copies of both the original bulletin and the supplement may be obtained from Sindar.

#### **Record Babbitt Advertising**

B. T. Babbitt, Inc., New York, late last month began the biggest advertising campaign in its history, according to Marshall S. Lachner, president. The first portion of the new promotion will be concentrated on television advertising. For this purpose Babbitt's advertising agency, Brown and Butcher, Inc., New York, has developed a new animated cartoon character called "Mr. Norman Normal." Throughout the 58 second commercials, which feature music, singing, dancing and a story line, "Norman Normal" will promote "Bab-O" plus other Babbitt products, including "Glim," "Air-Gene," "Cameo" copper cleaner and "Vano" bleach. After product indentification on television has been established, the new cartoon character will be used as the central figure in radio, newspaper and outdoor point-of-sale advertising.

#### New Pyrethrum Brochure

Publication of the third annual edition of "Pyrethrum Facts," was announced recently by African Pyrethrum Development, Inc., 65 Pine St., New York 5. The two-color, eight page booklet provides information on advances in the pyrethrum field during 1957, applications of the product and related data, including its safety features and labeling requirements. Charts and graphs are used to show production rates since the end of World War II and recent export quantities to various nations.

#### W. A. LaLande Honored

William A. LaLande, Jr., vice-president of Pennsalt Chemicals Corp., Philadelphia, was honored recently by the Philadelphia Chapter of Alpha Chi Sigma, national professional chemical fraternity for "his outstanding services to the chemical industry, the community and his profession" as a chemist, teacher and administrator. He has been vice-president and technical director of Pennsalt since 1955. He joined the company in 1944 as research director.

#### **Tallow Exports Lower**

U. S. Exports of edible and inedible tallow were estimated at 80,000,000 pounds in January, it was announced recently. This compared with 97,000,000 pounds each in both January and December, 1957. The 1957-58 Oct. to Jan. figure is 350,000,000 pounds, compared with 402,000,000 pounds in the corresponding period of 1956-57. Over 80 per cent of the world's exports of tallow originate in the United States.

#### **New Colgate Hotel Soap**

A new hard-milled bath soap designed for the hotel and motel trade was introduced recently by Colgate-Palmolive Co., New York. Tradenamed "Colgate," the bar is said to provide rich lather in both hard or soft water. It is lightly scented and comes stock wrapped in three sizes. In addition, the package may be imprinted with the name of the hotel or motel if so desired.



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#### Pascal Nat. Starch Pres.

Donald D. Pascal recently was appointed president and chief administrative officer of National





D. D. Besser

J. Dillon

Starch Products, Inc., New York. He succeeds Frank Greenwall, president since 1938, who becomes chairman of the board and chief executive officer.

Executive vice-president since April, 1956, Mr. Pascal joined National Starch in 1929 as a laboratory assistant. He then served as general manager of the company's midwest division, technical director, and vice-president of sales.

Mr. Greenwall is currently a trustee and vice-president of the Corn Industries Research Foundation; chairman of the executive committee of the Adhesives Manufacturers Association of America, and a director of the Packaging Institute.

The company also announced that James Dillon has been elected





F. Greenwall

W. Juenger

senior vice-president and William Juenger has been named sales representative. Mr. Dillon will be responsible for exploring and developing new fields of company activity in addition to becoming chairman of National's research committee. He was appointed a vice-president in 1954 and a director in 1956. Prior to that, he served as director of personnel relations and as secretary. He joined the company in 1938.

Mr. Juenger will handle National's complete line of resins in Missouri, Iowa, Nebraska, Kansas, Oklahoma, Arkansas, southern Illinois and western Tennessee.

#### Edwin S. Crosby Dies

Edwin S. Crosby, 70, retired president of Johns-Manville International Corp., New York, died May 8 at his home in Maplewood, N. J., after a long illness.

Mr. Crosby was elected president and director of Johns-Manville in 1928, after the company had acquired Celite Co., Los Angeles, of which he was vice-president of sales and a director. He retired in 1951 because of ill health.

#### SAACI Sales Clinic Oct. 20

The Salesmen's Association of the American Chemical Industry, Inc., will hold its annual sales clinic at the Roosevelt Hotel, New York, Oct. 20, it was announced recently. Raymond Tower of Westvaco Chemical Division of Food Machinery & Chemical Corp., New York, is chairman of the SAACI sales clinic committee.

#### New D&O Masking Agent

The industrial odorant laboratories of Dodge & Olcott, Inc., New York, recently announced development of a new all-purpose masking agent. Called "A-to-Z," odor mask, the new compound is available in four fragrances, including "fresh mint," "fruity," "clean and sharp and fresh," "outdoor." The product is designed for use in all types of industrial perfuming, according to the manufacturer.

#### **Majestic Names Koelling**

Appointment of Arnold F. Koelling as sales representative in the middle western states for Majestic Wax Co., Denver, was announced recently by Irving Goldstein, sales manager. He succeeds Charles Gibbs, who has been transferred to the east central territory.

#### "Silver Dust" Promotion

Lever Brothers Co., New York, recently announced a promotion campaign, featuring a 25 cents cash refund offer, on behalf of its "Silver Dust" blue detergent. To obtain the refund, consumers must send to the company a boxtop from any size "Silver Dust" carton and a refund slip. The promotion will be backed by heavy advertising, including large space newspaper advertisements and spot radio announcements. Dealer premiums are also being offered in

connection with the promotion. A different "Cannon" premium is included in all three "Silver Dust" package sizes: a face cloth in the regular, a kitchen towel in the giant, and a bath towel in the king

Shipment of 7,000 pounds of liquid pyrethrum extract is delivered from Nairobi, Kenya Colony, Atrica to International Airport, New York City. Consignment was ordered by the McLaughlin Gormley King Co., Minneapolis, from Pyrethrum Board of Kenya. MGK is one of leading manufacturers of insecticides based on pyrethrum extracts.





### Filter with Celite filter aids

To survive in today's retailing "jungle," your product has to outshine all comers and sell itself. For this reason, more and more manufacturers are relying on Johns-Manville Celite diatomite filter aids to polish their products to a brilliant clarity.

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JOHNS-MANVILLE



#### Liquid Syndets Continue Sales Gain

LiQUID synthetic detergents provide the brightest spot in the combined soap and detergent market picture for the first quarter of 1958. Tonnage sales of liquids show a gain of 29.9 per cent over the first quarter of 1957. However, they are down 8.8 per cent from the last quarter of 1957.

Total sales of soap and synthetic detergents in the first quarter of this year amounted to 966,771,00 pounds, valued at \$241, 990,000, compared with 1,032,550,-000 pounds and \$247,685,000 for the corresponding quarter of last year. These figures represent a 6.4 per cent drop in tonnage and 2.3 per cent drop in value from the first quarter in 1957, but a 0.8 per cent gain in tonnage and two per cent gain in dollar value over the last quarter. The above sales statistics are collated by the Association of American Soap and Glycerine Producers from reports of member companies.

Synthetic detergents again

claimed a larger share of the combined market. They now account for 72.2 per cent of the total tonnage, up from 69.5 per cent in the first quarter of 1957. Sales of synthetic detergents in the first quarter of 1958 amounted to 698,-306,000 pounds, worth \$169,963,-000, down 2.7 per cent in tonnage and up 2.6 per cent in value over the corresponding three months period of last year. Compared with the last quarter of 1957 syndet sales showed a gain of one per cent in tonnage and 3.3 per cent in value

Sales of solid synthetic detergents show strong fluctuations. Tonnagewise this year they have dropped 6.5 per cent from the first quarter of 1957 but gained 2.9 per cent over the last quarter, with solid synthetics in bulk down 60.5 per cent from the first and up 9.3 per cent from the fourth quarter.

Tonnage sales of soap dropped 14.8 per cent from the first quarter of 1957 but rose 0.1 per cent from the fourth quarter. Dollarwise soap sales at plant are off 12.2 per cent from the first and 0.8 per cent from the last quarter of 1957. Total soap sales in the first three months of this year amounted to 268,465,000 pounds valued at \$72,027,000.

#### **Brillo Earnings Lower**

Brillo Manufacturing Co., Brooklyn, N. Y., recently announced a decline in income and earnings during the first three months of 1958. Net income amounted to \$152,390, equal to share earnings of \$1.06. This compared with \$162,281 and \$1.12 in the first three months of 1957.

#### **Chemway Earnings Rise**

Chemway Corp., Mountain View, N. J., recently announced an increase in income and earnings for the first quarter of 1958. Net income amounted to \$75,882, equal to share earnings of seven cents. This compares with \$27,466 and two cents in the corresponding period of 1957.

#### Soap and Detergent Sales, First Quarter 1958-1957

	Po	Pounds Dollars			
	1958	1957	1958	1957	
Scaps other than liquid		307,709,000 921,000*	70,760,000 1,267,000	80,438,000 1,603,000	
Total	268,465,000	315,076,000	72,027,000	82,041,000	
Bar toilet soaps, incl. mechanics Yellow and other than white laundry bars White laundry bars Soap chips and flakes, pkgd. Soap chips and flakes, bulk Soap granulated, sprayed, pkgd. Soap granulated, sprayed, bulk Washing powders, pkgd. Washing powders, bulk Hand pastes Hand powders Paste and jelly soaps (potash and other). Shaving soaps Shaving creams Soap shampoo, liquid, pkgd. Liquid soaps, other than pkgd. shampoo. Miscellaneous or other soaps Detergents, solid Detergents, liquid	9,717,000	134,881,000 12,371,000 38,529,000 12,696,000 25,911,000 46,119,000 700,000 3,133,000 1,078,000 1,974,000 4,017,000 788,000 23,000* 898,000* 394,000 641,482,000 75,992,000	40,427,000 1,150,000 6,227,000 3,384,000 2,564,000 10,268,000 2,161,000 39,000 263,000 139,000 438,000 438,000 372,000 3,040,000 48,000 1,219,000 134,143,000 35,820,000	44.334,000 1,410,000 7,228,000 4,209,000 3,106,000 12,473,000 104,000 275,000 123,000 313,000 522,000 3,126,000 2,000 1,394,000 137,078,000 28,566,000	
Total	698,306,000	717,474,000	169,963,000	165,644,000	
Detergents, solid, other than shampoo, pkgd.  Detergents, solid, other than shampoo, bulk Detergents, liquid, other than shampoo, pkgd. Detergents, liquid, other than shampoo, bulk Detergent shampoos, liquid Detergent shampoos, solid	567,684,000 27,579,000 10,500,000* 1,598,000* 243,000* 4,315,000	568,445,000 69,733,000 7,986,000* 1,293,000* 221,000* 3,304,000	127,824,000 3,631,000 31,130,000 1,813,000 2,877,000 2,688,000	128,337,000 6,646,000 24,299,000 1,576,000 2,691,000 2,095,000	

<sup>\*</sup> Expressed in gallons.

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emulsion cleaners

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- C Wetting and Dispersion of Liquid-Solid Systems
- D Inhibition of Rust and Corrosion

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2. Textile Oils	Emulsifying Agent for Textile Processing Oils	Wetting and Dispersing Agent for Textile Fibers
3. Leather Oils	Emulsifying Agent for Leather Processing Oils	Wetting and Dispersing Agent for Leathers
4. Drilling Mud	Emulsifying Agent for Oil	Surface Tension Depressant
	DISPERSION AND WETTING OF SOLIDS	
5. Rubber Manufacture	Thermo Plasticizing Agent	Increases Dispersibility of Filler
6. Fuel Oil	Keeps Sludge in Suspension	Prevents Segregation of Moisture
7. Printing Ink Manufacture	Aids Dispersion of Pigment	Reduces Viscosity of Ink
8. Ore Flotation	Flotation Reagent	Selective Wetting Agent
9. Additives for Lube Oil	Acts as Detergent	Inhibits Bearing Corrosion
	WETTING AND DISPERSION OF LIQUID-SOLID SY	STEMS
10. Crude Oil Emulsion Splitting	Reverting Agent for Water-in-Oil Emulsions	Aids in Wetting out Salts and Solids
11. Emulsifiable Solvent Cleaners	Dispersing Agent for Oil and Grease Deposits	Acts as Emulsifying Agent
12. Dry Cleaning Compounds	Linking Agent for Water and Solvent	Loosens Dirt Absorbed by Fabric
13. Fat Splitting Process	Dispersing Agent for Solid Fata	Acts as Wetting Agent
	INHIBITION OF RUST AND CORROSION	
14. Corrosion Preventive Compounds	Rust and Corrosion Inhibiting Agent	Acts as Moisture Barrier
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Colgate-Palmolive Company, 300 Park Avenue, New York 22, N.Y.

#### Mason Intex Sales Mgr.

William B. Mason has been named general sales manager of Intex Chemical Corp., Lodi, N. J.,



William B. Mason

it was announced recently. He joined Intex in June, 1957, and formerly was western sales manager. In his new post, he will direct sales of the firm's entire line of industrial and textile chemicals. He will headquarter at Lodi. Before coming to Intex, he was Cleveland district sales manager for Onyx Oil & Chemical Co., Jersey City, N. J.

#### Zipse Joins Brokerage Firm

Robert J. Zipse, formerly production manager of the insecticide division of Olin Mathieson Chemical Corp., Baltimore, has joined the New York brokerage firm of Pennington, Colket & Co. Prior to joining Olin Mathieson in 1954, Mr. Zipse was agricultural

Robert J. Zipse



chemicals sales manager for Geigy Chemical Co., Ardsley, N. Y.

#### **CSMA Proceedings Ready**

Proceedings of the 44th annual meeting of the Chemical Specialties Manufacturers Association are now available, it was announced recently by the association's secretary H. W. Hamilton. The 174-page paper-bound volume includes all available papers presented at the meeting, committee reports and records of other business transacted. The meeting was held at the Hollywood Beach Hotel, Hollywood, Fla., Dec. 9-12.

CSMA mailed a copy to each registrant at the meeting. Additional copies may be obtained from Chemical Specialties Manufacturers Association, 50 East 41st St., New York 17, N. Y. Price is \$7.50 per copy in the United States and \$8.00 in foreign countries.

#### **New National Wax Unit**

National Wax Co., Chicago, last month announced that it is constructing a new 47,000 square-foot building on Touhy Ave., near Central Park Ave. The company, which manufactures petroleum waxes, is presently located at 1300 West Division St.

#### Jean Maubert Honored

Jean Maubert, chief administrator of P. Robertet, Inc., essential oil house of Grasse, Paris, and New York, has been appointed Conseiller du Commerce Exterieur de la France, it was announced in a recent issue of the Journal Officiel (official gazette). M. Maubert, a frequent visitor to the United States, is the great grand nephew of P. Robertet who founded the firm in 1850. The New York branch is 10 years old. The company has branches in Tokyo and London, and compounding facilities in Sao Paulo, Brazil.

The French government does not usually appoint youthful counselors. M. Maubert is in his thirties and the appointment is really noteworthy.

#### Spitz New PCA President

R. J. Spitz, vice-president of Newport Industries Co., New York, a division of Heyden Newport



R. J. Spitz

Chemical Corp., was elected president of the Pulp Chemicals Association at the organization's recent annual meeting held at the Savoy-Plaza Hotel, New York. Mr. Spitz succeeds the late Albert Scharwachter, of Arizona Chemical Co., who died early this year. L. A. Radeker of Champion Paper & Fiber Co., was elected vice-president. Elected officers of the association's tall oil division include A. B. Doran, Union Bag-Camp Paper Corp., chairman, and A.M. Rankin, Continental Can Co., vice-chairman.

#### **P&S Appoints Ring**

Norman E. Ring, controller of Piatt & Smillie Chemicals, Inc. St. Louis, has been named executive assistant to the treasurer, it

Norman E. Ring



# ... about chemical specialties



by Milton A. Lesser

MODERN CHEMICAL SPECIALTIES

SYNTHETIC DETERGENTS



by John W. Mc Cutcheon

THIS 514 page book covers the formulation, manufacture, and use of polishes, cleansers, detergents, floor-care and leather-care products, textile products, and industrial, household and allied chemical specialties. Each of the 42 chapters covers a different specialty and includes raw material listings, manufacturing methods and formulas for that specialty. The manufacturer, marketer, chemist and production man will find this book indispensable for reference work when dealing with chemical specialties.

A PRACTICAL 435 page book concerned primarily with the detergent compounds. Defines the various types of synthetics as to class, manufacture, application and processing. Presenting an adequate theoretical background on fundamentals of surface activity in addition to a thorough analysis of the raw materials and manufacturing processes involved, this text will be of interest to all those involved with the manufacture, packaging, application and processing of detergents as well as those supplying raw materials.

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#### MAC NAIR-DORLAND CO. 254 West 31st St., New York 1, N. Y.

Company

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was announced recently. As controller, Mr. Ring heads Piatt & Smillie's finance and accounting department, and its production and merchandising divisions. He joined the company in September, 1957. Prior to that, he had been with Touche, Niven, Bailey and Smart, a certified accounting firm.

#### ──★── New Du Pont Service Labs

The opening of a new five million customer service and application research laboratory building was announced by E. I. du Pont de Nemours & Co., Wilmington, Del., on May 21. Located at Chestnut Run, du Pont's technical sales development center just outside Wilmington, the new brick and metal frame building houses separate facilities for the Electrochemicals and the Pigments Department. On two floors, the laboratory contains 81,000 square feet of floor space holding 150 separate rooms, laboratories and demonstration areas.

The electrochemicals wing contains equipment for duplicating customer operations in the sodium, peroxygen, chlorine, vinyl, and related products fields. "Oxone," du Pont's monopersulfate bleach for incorporation in washing compounds is among products tested in the peroxygen department which is equipped with a launderometer and an array of whiteness evaluation apparatus. Sodium perborate and other bleaches are, of course, tested in this laboratory.

Testing and application research in the field of chlorohydrocarbon solvents is one of the principal concerns of the chlorine products section. These solvents are non-flammable and extensively used in industrial metal cleaning and in the textile dry cleaning field. "Perclene" perchlorethylene is widely used in dry cleaning plants. Methyl chloride and methylene chloride, used as aerosol solvents and propellants, belong in this section.

The pigments laboratory is equipped to test pigments incorporated in paint, plastics, textiles, ink, paper, etc. Development of pigment formulations for customer use is another important section of this laboratory.

#### **Babbitt Earnings Higher**

An increase in income and earnings during the first quarter of 1958 was announced recently by B. T. Babbitt, Inc., New York. Net income for the three months ended Mar. 31 totaled \$159,046, equal to share earnings of 13 cents. The company reported a loss of \$92,426 in the similar quarter last year.

#### **Dow Advances Norbury**

Appointment of James Norbury, Jr., has been promoted to supervisor of industrial chemical sales for the Boston office of Dow Chemical Co., Midland, Mich. He had been on the Boston sales staff since he joined the company in 1950. He will be responsible for servicing markets in Massachusetts, Maine, Vermont, New Hampshire, Rhode Island and eastern Connecticut.

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#### **AMA Labeling Bill Extends Coverage**

A MODEL "Uniform Hazardous Substances Act" has been developed and circulated by the American Medical Association's Committee on Toxicology. An extensive comment on the act and its history authored by Bernard E. Conley, chairman of the committee, appeared in April 26 issue of the Journal of the American Medical Association.

The AMA bill would cover

the precautionary labeling of hazardous substances in commercial, household and industrial chemical products. Its scope is thus far wider than that of the bills now pending before Congress as well as of the model bill put forth by the Chemical Specialties Manufacturers Association, which cover only household chemicals. Labeling standards stipulated by the AMA bill would apply also to chemicals destined for

export. It would prohibit the re-use for hazardous substances of food and drug containers bearing their original labels or identifiable with food and drug containers by reason of shape or other characteristics.

Hazardous substances are those which are toxic, irritating, sensitizing, corrosive, flammable, explosive or radioactive. Previously suggested labeling laws do not cover strongly sensitizing chemicals. They are defined in the AMA model bill as follows: "... any substance which, through an allergic or photodynamic process may cause an inflammatory reaction in living tissue on contact in susceptible individuals. The frequency and severity of the sensitization reaction shall determine whether a sensitizing material offers a significant potentiality for causing injury."

In contrast to other existing or pending legislation pertaining to labeling of hazardous substances the AMA bill would omit all mention of the word poison. According to the bill "a toxic substance is any material which kills half or more of a group of laboratory animals within two weeks in a single oral dose of five grams/kilogram or less, or on skin contact for 24 hours in a concentration of one gram/kilogram

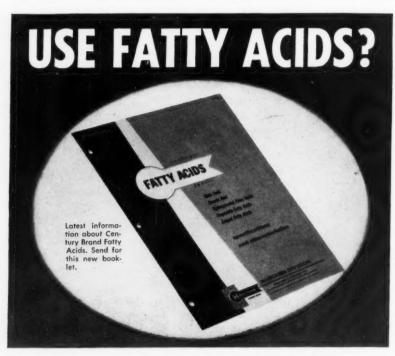
(Turn to Page 190)

#### **Surfactant Solutions**

(From Page 53)

have been fairly well laid, the more recent work being concerned with the mathematical and theoretical analyses of available data to provide a theory consistent with the many phenomena to be considered. From X-ray data, Harkins (22) suggests a quasi-cylindrical shape. Nakagki (45) calculated that a soap micelle would be diskshaped. Debye and Anaker (8) by mathematical analysis believe that micelles are not spheres or disks, but are rods.

Tartar (60), has developed from available data, a theory which he admits is as yet incomplete. He considers a micelle as having an interior consisting of hydrocarbon



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chains with the polar groups on the surface. The chains are in unordered arrangement (Hartley) and, except for polar end spacing, are in a "liquid" state, comparable in density and arrangement to that of the liquid hydrocarbon of like chain length. The semi-axis dimension does not exceed the maximum stretched-out length of the hydrocarbon chain. The shape may then vary from a sphere to an oblate spheroid, depending on chain length and area occupied per polar group on the surface. Although Philipoff (47) suggests that the model of small micelles with molecules oriented in a double layer is the most adequate of those so far advanced, his conclusion that no complete theory of micelle state has been developed will probably be true for several years to come.

### Micellar Size

Micelle formation occurs when the energy released by aggregation of the hydrocarbon chains is sufficient to overcome the electrical repulsion of the ionic groups and to balance the decrease in entropy accompanying micelle formation. The balance of these opposing forces promotes definitely sized micelles at and above the critical micelle concentration. With their regular structure, micelles should exhibit a regular association of molecules, with resultant molecular weight. Methods used for estimating molecular weight include equilibrium dialysis, porous disk, X-ray diffraction and, particularly, light scattering. The data from a number of sources have been condensed in Table I. Shown are the chemicals tested, the number of molecules per micelle, micellar molecular weight, method, and au-

As might be expected, lower hydrocarbon chain length compounds in any given series have lower micellar molecular weights than those with longer chain lengths. Considerable variation in molecular weights of micelles reported for a given compound is evidenced by different methods for

measurement, as is variation for the same compound by the same method. In this latter instance it is likely that compound purity is more responsible than technic variations. The scarcity of data for nonionic products is evident. For the homologous series prepared as sodium or magnesium alkyl sulfonates, the ratio of Na to Mg salt should approximate 1:2; which it does, however, only in the case of the dodecyl sulfonate.

Not included in this table

are data for quaternary ammonium compounds. These compounds lend themselves readily to work of this nature because structural changes in homologous series can be made easily, thus providing essentially pure compounds for evaluation. While quaternaries offer much in the way of ease of handling and have provided much basic information, our interest lies in anionic and nonionic compounds, hence only these have been recorded.

(To be concluded)



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### Colgate Earnings Up

A slight increase in earnings was reported in the first quarter of 1958 by Colgate-Palmolive Co., New York, despite a slight decline in sales. Net income for the three months ended March 31 amounted to \$4,419,000, equal to share earnings of \$1.72. This compared with \$4,329,000 and \$1.70 in the similar 1957 quarter. Net sales totaled \$128,296,000, compared with \$128,410,000 in the corresponding quarter last year.

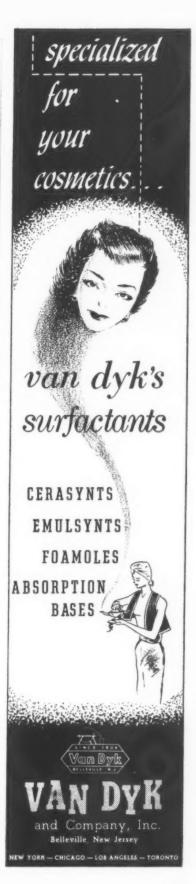
### **Book Reviews**

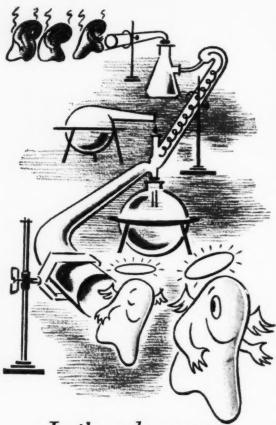
(From Page 143)

in soap or other anionics are capable of incorporating a certain proportion of the carbon black in a wash-fast form in cotton fibers, causing the goods to become grey. This happens if too little anionic is used. Since the wash liquor usually contains an excess amount of surfactant in relation to carbon black the danger is remote. However, nonionics are more favorable for treating these types of soil.

A number of papers originating in Japan include the following titles: "A New Semimicro Continuous Method of Wetting Test: 'Tensiometer Method' and its Applications", by W. Kimura and W. Yano; "A New Qualitiative Test Method for Nonionic Surface Active Agents: 'Cloud Number Test' ", by Yutaka Tanaka; "Analysis of Surfactants by Ion-Exchange Methods. A New Rapid Semimicro Method for Determination of Anionics in the Presence of Non-Ionics", by Seiichi Takahama and Tetsuyuki Nishida.

The second section in the fourth volume, dealing with suspensions and agglomerations, includes two physicochemical studies of pesticides. The first, entitled "Aggregation Phenomena in DDT Suspensions", by G. T. Barnes and A. E. Alexander, Sydney, Australia; the second on the "Effect of Salts and Clays on the Stability of DDT Suspensions" is authored by D. K. O'Neill and A. E. Alexander, also of Sydney.





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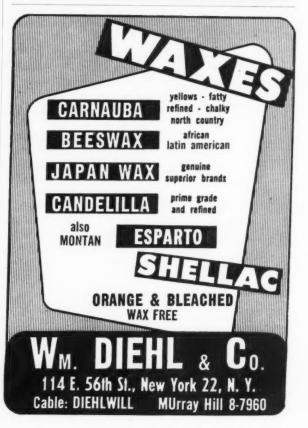
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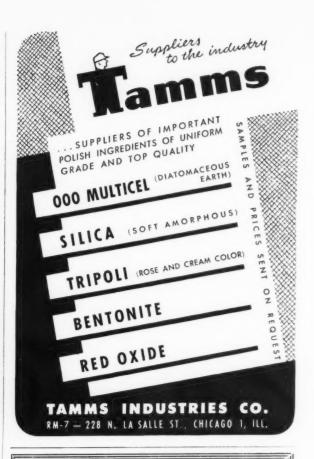
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### Lever Appoints Shayne

Appointment of Herbert M. Shayne as a product manager in the Pepsodent Division of Lever Brothers Co., New York, was announced recently by William K. Eastham, division merchandising manager. Mr. Shavne formerly was director of marketing, planning and research for the Hudson Pulp and Paper Co. In his new capacity, he directs merchandising and advertising for "Dove" toilet bar.

(Reference Books see page 160)

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### **Glycerine Recovery**

(From Page 56)

the first wash (section 1) is recovered at the overall recovery rate and therefore may be disregarded.

Comments on these calculations will be given later. For the moment this part may be summed up by saying that the loss of any salt glycerine introduced into a counter current process will never be less than 60 per cent and never more than 70 per cent but more often than not nearer the latter figure. Of course by the use of calculations similar to those given here exact figures can be obtained for any set of conditions.

(To be Continued)

### Theimer Guest Speaker

Ernst T. Theimer, director of research for van Ameringen-Haebler, Inc., New York, manufacturer of perfume and flavor materials, was guest speaker at a recent meeting of the Raritan Valley

subsection of the American Chemical Society held at Rutgers University. Dr. Theimer's topic was "Chemistry of Perfume Materials."

### **AMA Labeling Bill**

(From Page 180)

or less." Comparable standards are proposed for inhalation of atmospheric concentration of toxic gases, vapors, mists or dusts. Degrees of toxicity are to be reflected through use of the signal words "danger," "warning" or "caution" and statement of principal hazards.

While the need for a uniform labeling law is recognized by all parties concerned it is felt by CSMA and some members of the specialties industries that the AMA bill's would-be coverage is too wide. They feel that the public interest would be better served by legislation specifically designed to cover household chemicals. It is feared that the AMA model bill lacks the necessary flexibility.

### Research Budgeting

(From Page 46)

References (1) e.g.: Chemical and Engineering News, March 17, 1958, pp. 52-54. Chemical Week, April 5, 1958, p. 35.

(2) Science and Engineering in American Industry—Final Report on a 1953-51 Survey, National Science Foundation.

(3) Klippstein; Chemical and Engineer-

ing News, July 1, 1957. (4) Percival; ibid: October 5, 1953, pp.

### **Hummel Offers Perborate**

Hummel Chemical Co., 90 West Street, New York, is offering sodium perborate, tetrahydrate, technical and N.F., it was announced last month. The product is available in screens ranging from fine to coarse powders. In addition to laundry bleach sodium perborate is used in tooth powders and a number of other specialties. Hummel's material comes in polyethylene lined jute bags. Technical data and other pertinent information may be obtained from the firm.

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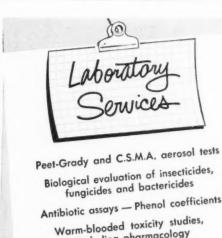
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### **Aerosol Repellents**

(From Page 86)

in diethyltoluamide aerosol formulations.

Like earlier repellents, diethyltoluamide can exert a plasticizing action on certain fabrics and finishes, but since diethyltoluamide dries quickly when applied to skin, plasticizing action is greatly minimized in actual usage. This quick drying characteristic, coupled with its lack of oiliness, renders diethyltoluamide quite acceptable from a cosmetic standpoint.

Data are presented to show the effectiveness of diethyltoluamide for both skin and clothing treatments

### References

- Gilbert, I. H., Gouck, H. K., and Smith, Carroll N., "New Insect Repellent," Soap and Chemical Specialties, May and June, 1957.
- Gouck, H. K., and Gilbert, I. H., "Field Tests With New Tick Repellents in

1954," Jour. Econ. Ent., Vol. 48, No. 5: 199-500, 1955.

- Report to Hercules Powder Company by the Hazleton Laboratories, Falls Church, Virginia, dated Sept. 14. 1956.
- Ambrose et al., Federation Proceedings, Vol. 17: 344, 1958.

### As Reader Sees It

(From Page 39)

think this could be done next year? R. D. Cribb,

Marchon Products, Ltd. Whitehaven,

England

The listing of synthetic detergents and other surface active agents compiled by John W. Mc-Cutcheon is not an annual feature in Soap & Chemical Specialties, but appears every three or four years. The last one was published in 1955. The list of manufacturers does not include a single firm outside of the U.S. who does not have either a subsidiary or an agent in the U.S. However, we will take up the question raised by Mr. Cribb in preparing the next listing. Ed.

### **Automatic Soap Batching**

(From Page 141)

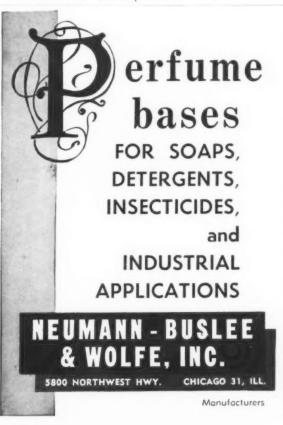
tion. In addition, it is said to facilitate good industrial housekeeping. Its principal advantage is, of course, a high degree of accuracy in compounding.

### Lehn & Fink Borrower

Lehn & Fink Products Corp., New York, has borrowed \$3,000,-000 from the Equitable Life Assurance Society on a note due June 1, 1973. Goldman, Sachs & Co. assisted in arranging the financing.

### **Howard Berry Dies**

Howard Berry, retired vicepresident and treasurer of Mathieson Chemical Corp., New York, now part of Olin Mathieson Chemical Corp., Baltimore, died Apr. 27 in Clearwater, Fla. He was 72 years old.





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### **Coming Meetings**

American Chemical Society, national meeting, Chicago, Sept. 7-12.

American Oil Chemists Society, short course on soaps and syndets, Princeton Inn, Princeton, N. J., July 14-18; fall meeting, Sherman Hotel, Chicago, Oct. 20-22; 50th anniversary spring meeting, Roosevelt Hotel, New Orleans, April 20-22, 1959.

Association of American Scap & Glycerine Producers, 32nd annual convention. Waldorf-Astoria Hotel, New York, Jan. 20, 21 and 22, 1959.

Canadian Chemical Specialties Manufacturers, first annual meeting, Queen Elizabeth Hotel, Montreal, P.Q., Nov. 13-14.

Chemical Specialties Manufacturers Association, 45th annual meeting, Commodore Hotel, New York, Dec. 8-10; 45th midyear meeting, Drake Hotel, Chicago, May 18-20, 1959.

Entomological Society of America, sixth annual meeting, Hotel Utah, Sait Lake City, Dec. 1-4.

Industrial and Building Sanitation Maintenance, third show and conference. Sheraton Philadelphia Hotel and Convention Hall, Philadelphia, Nov. 3-6, 1958.

National Agricultural Chemicals Association, annual meeting, Bon Air Hotel, Augusta, Ga., Oct. 29-31

National Hotel Exposition, Coliseum, New York, Nov. 3-7.

National Packaging Exposition of American Management Association. Coliseum, New York, May 26-30. Packaging Conference, Hotel Statler, May 26-28.

National Pest Control Association, 25th annual convention, Hotel Statler, Washington, D. C., Oct. 20-23.

National Sanitary Supply Association, industry management syminar and trade show. Fairmount Hotel. San Francisco. Oct. 19-21, 1958; 36th annual convention and trade show. Conrad Hilton Hotel. Chicago, April 12-15, 1959.

Premium Advertising Conference, Sheraton Astor Hotel, New York Sept, 8-11.

Salesmen's Asociation of American Chemical Industry, golf outings, May 20, June 28, July 22, Aug. 19 and Sept. 18. Sales clinic, Roosevelt Hotel, New York, Oct. 20.

Society of Cosmetic Chemists. seminar, Barbizon Plaza Hotel, New York, Oct. 8-9; annual meeting, Statler Hotel, New York, Nov 20.

Toilet Goods Association, 23rd annual convention, Poland Spring House, Poland, Me., June 25-29.

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## Eale Ends

TRVING WEXLER, president of Bucking-ham Wax Co., Long Island City, has sent us a card from Barcelona, Spain, while an a trip through Europe. His raves about the beauties of Spain are worth noting, coming as they do from a hardened old campaigner like Irving. He will be in Europe until some time in July.

Aerosols in paper containers are well along in the development stage. A mid-west paper container outfit is reported to have a package which is modeled after those ready-to-bake biscuit packages. Will they stand the pressure? Sure thing. They tell us that these biscuit containers will take up to 80 lbs. pressure.

At the recent Packaging Exposition in N. Y., Ed Bennett and Al Pero of Fluid Chemical out in Newark, N. J. were the most popular persons in the show. They were serving hot coffee, the concentrate from a carosol container and the sweetening also in an aerosol package. Judging from the number of people lined up for a free drink of coffee, it must have been real good stuff!

Just received a postcard from Tanganyika, down Africa way near Kenya where they also grow pyrethrum. The card shows a shot of Happy Felton, U.S. television personality passing out aerosol containers of a sun-screen and insect repellent combination to a group of friends to assure their protection and comfort during a recent safari in Africa. The aerosols were made up especially for them by Fritzsche Brothers, Inc., New York, and shipped out to Africa. They tell us that there's plenty of bugs and sun in Tanganyika.

If all the people from the chemical specialties business visit Europe as planned, the Continent should sink another foot or so into the ocean. F'rinstance, the Joe Fulds of Baltimore celebrated their 25th wedding anniversary with a trip abroad last month via the Queen Mary. They planned to visit England and stop off in Belgium to take in the fair at Brussels. A shipmate of the Fulds, whether they or he knew it or not, was Fred Lodes, aerosol consultant, who reports that business is humming along in Europe.

Other "innocents abroad" recently were Ray Bodecker of Colgate and spouse. They made a month's trip which included stop-overs in 10 countries. Ray and his wife wife flew via Sabena airlines to Amsterdam. From there they hopped by helicopter to Brussels where they picked up a bus for a motor trip to such assorted countries as Holland, France, West Germany, Austria, Switzerland, Italy, Luxembourg, Lichtenstein. What! They missed Outer Slobodia? Also on the itinerary was a five day stop in London and environs.

Before and after the Chemical Specialties mid-year meeting in Cincinnati last month, we understand that the purchasing department of P & G was deluged with sales brass from out of town suppliers, all in town for the CSMA convention. While in town for the meeting who would miss the opportunity to call on a big customer and kill two stones with one bird?

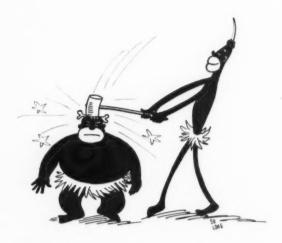
Ted (S. T.) Frascinella, oldest employee of the Soap Association in terms of service has succumbed to the lure of the Florida sun and resigned after 27 years with AASGP. He intends to set himself up in the soap jobbing business somewhere in the Dade County (Miami) region of Florida. At his side ready with advice and counsel will be Mrs. F., the former Lillian Zuckerman. She was secretary to Roy Peet, manager of the Soap Association, before her marriage. The

Frascinella's have two boys, Don Alan and Kip Philip.

A direct mail sampling campaign for "Zest," the new P & G synthetic detergent toilet bar, is reported to have been recently completed. The campaign was said to cover the country from coast to coast, a really big job if we ever heard of one. So, we now assume the product is on a national distribution basis. It will probably sell best, like any synthetic, in the mid-west hard water areas where bath-tub ring is a real problem.

Some times, they tell us, gin-rummy players lose their touch, and the experts get "taken" by the rankest amateurs. This, the grapevine tells us has happened to Jim Ferris of Hooker Electrochemical, currently president of the Chemical Specialties Manufacturers Assn. Jim, a staunch exponent of this great American "game of skill," has of late been accused by some of his CSMA cohorts of playing strictly "customer gin." He denies this, says it's just a run of tough luck. Take your pick.

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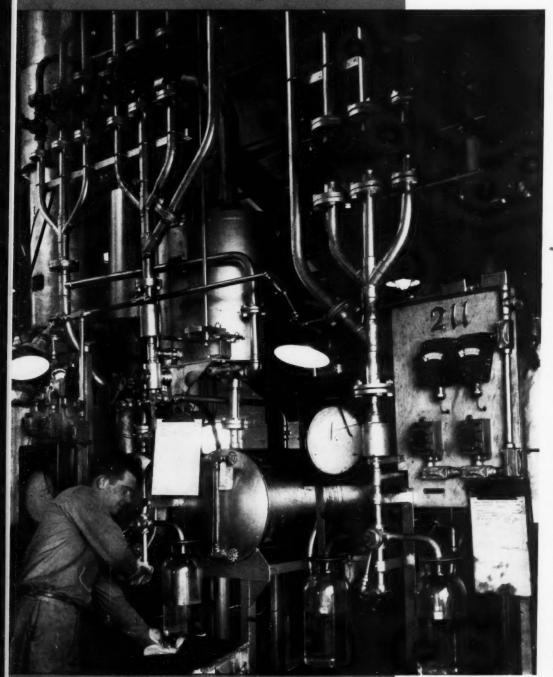


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